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Medical Education

AT the meeting of the Council on Education of the American Medical Association, one of the speakers said that the object of a medical education was to make good practitioners. No more egregious error could be promulgated, or one more disastrous were it to be disseminated. Fortunately the good sense of his hearers prevented any serious harm.

The object of medical education is to prepare candidates to pass examining boards. The object of examining boards is to prevent the candidates passing. Since some must pass, the most advanced and truly scientific boards arrange their examinations so as to exclude every applicant who has any knowledge of the practice of medicine, any special interest in the sufferings of afflicted humanity, or any practical knowledge of the means of curing or relieving the sick. Lest some experienced practicians should succeed in slipping by, the guardians of the portal in some states effectually prevent such calamities, by excluding from the examinations all except recent graduates.

Sir Victor Horsely has been knighted as a recognition of his eminent services in mapping out the functions of the cerebrum. Huchard was the Nestor of French medicine, full of honors, well-earned. Semmola has rendered Italian medicine illustrious. Ehrlich has just electrified the world with his newly-discovered remedy for syphilis. In our own land we cite the names of S. Weir Mitchell, the dean of American internal medicine; Welch of Johns Hopkins; Osler, the pride of two worlds; Murphy the President of the American Medical Association; Billings and Simmons, the Siamese twins of the same great body; Jacobi, of New York; and that galaxy of great surgeons who have made Chicago famous—Ochsner, Ferguson, Bevan, Steele, and many more—yet not one of these would be permitted so much as to present his credentials and qualifications to the examining boards of some states.

In describing Al Sirah, the hairlike bridge over which true Mahometans skate from earth to heaven, across the gulf of Hades, they add that Jews and Christians are not permitted to attempt the passage but go right down by a direct route.

This year's meeting of the Council on Education was not marked by any sensational features. There were evidences of good work done, of a useful bracing up of the slacker colleges, of a general approximation toward a better and more uniform standard.

But the reaction against exaggerated conceptions and impracticable standards was evident. Instead of meek and cowardly acquiescence in unfavorable criticism, there

was a disposition to criticise the critic, and to examine his qualifications for his task and the justness of his strictures.

As an example of the effects of his work last year, we would remark that in our own sovereign state the educational authorities (nowhere more fair than in Illinois) were so moved by the charge of leniency, that they issued orders that all candidates for matriculation in medical colleges who did not present a diploma were to be examined on all the studies of the four-years' high school course! As there is not in existence any man who could pass a real examination of this sort, this meant the exclusion of all the applicants.

Fortunately, so it seems to us, the schools found means to meet the situation, without being compelled to close their doors after seeing their classes flock to the schools of neighboring states where sanity prevailed, for the supply of medical practicians is not regulated by law or by sentiment, but by the principle of supply and demand, as in all other occupations. Let any one school increase its requirements and the students flock to its competitors. Let all schools in any state raise their demands, and the other states get the classes. Let all the colleges in the land adopt a "high standard," and the country is inundated with irregulars, who skip the long and expensive course of instruction and come in without any preparation for their duties.

Reform by legal enactment, or by patent processes, or by any unnatural scheme or method, is sure to fail, because of some provision of nature unknown or overlooked, that effectually prevents success. Thus, the sportsmen of Scotland sought to increase the supply of game birds by destroying the animals that preyed upon them, but an infectious disease swept the other birds away and left fewer than ever. The foxes and weasels had really caught the sick and weakly and improved the stock. The mongoose exterminated the cane rats of Jamaica, then ate up the snakes, and the island is overrun with ticks and insect pests which had been kept down previously by the snakes.

England sought to purify her people by transporting felons to the antipodes, only to find that some mysterious and unsuspected law regulated their number, and for every forger, burglar, or footpad transported, another appeared to take his place.

Despite the slaughter of millions of rats, there has been no diminution of their number, since the removal of competition appears to facilitate their breeding.

The standards of medical education can be raised exactly as the general intelligence of the people is so raised that a better-educated doctor will be appreciated. The standard of excellence as a practician is not necessarily identical with the standard of education. It is not what a man knows but the use he can make of it, that counts. It is not the sum of one's knowledge but the part he needs to put in practical operation. One may be able to tag every germ that has come down the pike, to recite by rote the rules for every histologic, physiologic, bacteriologic, chemic, and all the other laboratories, that have been devised to fill the medical student's head with stuff he can never use, and yet when he is facing a sick man, what are all these things worth? While he is helplessly searching through a skull full of junk, some less educated personage steps up and with a simple word fills the need.

Education means the preparation of the pupil for his lifework. There is one education best for the laboratory specialist, another for the practician of medicine. Let each have the training that will best prepare him for his life-work; and let the license examination be made in accordance.

You are not beaten until you admit defeat. Nail Lawrence's flag to your top-mast: "Don't give up the ship."

THE MICROORGANISM OF POLIOMYELITIS: AN AMERICAN DISCOVERY

The Department of Health of the State of Pennsylvania recently announced the discovery of what is probably the microorganism of acute anterior poliomyelitis. Dr. Dixon and his assistants found, in the blood of acute cases of this disease, an organism differing from any heretofore described. In blood smears fixed in methyl-alcohol for one minute and stained with carbolthionin, the organism appeared as a faintly stained blue

rod, with regular cell wall, about ten microns long and 0.8 micron in width, curved at an angle of 60° to 75° at one end and occasionally at both ends. At times the curved end is bulbous. They may be discerned by a 4mm dry objective, but better by a 1-12 oil immersion. They are found free in the serum and in the body of the red blood corpuscle.

Blood from ten cases of last summer's epidemic, and thirteen cases during the acute stage in monkeys, the malady being produced experimentally, showed these organisms; while that from three normal human beings and thirteen normal monkeys proved negative. After inoculation with the virus these same monkeys gave positive results.

Had this discovery been made in Europe there would already have set in a pilgrimage of scientific men to worship at the new shrine.

DEATH OF DR. JOSEPH CLEMENTS

By the death of Dr. Joseph Clements of Wichita, Kansas, the medical profession has lost one of the profoundest thinkers it has developed in rescent years.

Dr. Clements was born in England. During his early manhood he was a minister of the Presbyterian church, coming into the medical profession after twenty years given to that work. For a number of years he practised in Kansas City, but his tastes were literary rather than practical. A year ago he published a small book entitled "The Metaphysics of the Nature and in the Conception of the Soul—Its Habitat." Dr. Clements never could quite understand why this book received as little attention as it did, but the fact was that it was too abstruse even for the well-educated, although it seemed very plain to its writer.

For the last year he had been engaged in preparing another work which would elucidate the former and remove the obscruity. During the last few weeks of his life it was a race with him in the endeavor to complete this work before death took him.

He has for a number of years been affected with angina pectoris, and his observations upon that disease, as manifested in his own person, have won unusual attention. Less than a week before he died the writer received a letter from Dr. Clements, in which he clearly foretold the approaching end, speaking of it with a calm fortitude which certainly seemed remarkable in one whose waking moments were attended with such agonizing pain.

The notice of this death, which appeared in *The Wichita Eagle*, seems to show that the citizens of that town awoke, after Dr. Clements' death, to the fact that they had numbered among their citizens, unwittingly, a remarkable man.

Dr. Clements is survived by a widow, a daughter and several sons.

For these things tend ſtill upward, progreſs is
The law of life, man is not Man as yet. . . .
But when full roused, each giant limb awake,
Each ſinew ſtrung, the great heart pulsing faſt,
He ſhall ſtart up and ſtand on his own earth;
Then ſhall his long triumphant march begin,
Thence ſhall his being date—thus wholly roused,
What he achieves ſhall be ſet down to him.
Browning, in "Paracelsus."

IS EXCESSIVE CHILDBIRTH A CRIME? DR. ROBINSON'S GREAT PAPER

Next month we shall publish what is probably the most startling, the most revolutionary paper that has ever appeared in these pages. This is Dr. Wm. J. Robinson's great presidential address, read at the recent meeting of The American Society of Medical Sociology in New York City. Dr. Robinson declares that it is the most important article that he has ever written. Knowing, as we all do, the absolute fearlessness with which the doctor attacks the medical and social problems of the day, this statement is significant, to say the least.

"I have come to the positive conclusion," he says, "that excessive childbirth among the poor is one of the greatest curses that afflict humanity. It is one of the greatest causes of low wages, poverty, ignorance, idleness, sickness, crime and death." Believing this, he comes out with the utmost frankness with a strong argument for the intelligent (not criminal) limitation of population, for the wider instruction of the people, for wiping absurd and cruel laws off the statute books, denouncing the whole "race suicide" argument as a bugaboo.

The New York World, in its report of this address, said that Dr. Robinson "startled the world." This *is* a startling paper, but it is brave, strong, attention-compelling from the first word to the very last. Whether you agree with him or not (and many of you, most of you, perhaps, will not) you *must* be impressed by this dignified presentation of one of the greatest problems of our century. "Tremendous" is the one adjective that describes it.

There will inevitably be opposition, criticism. We welcome it. We are by no means committed to all of Dr. Robinson's opinions, and we hope that this presentation of his ideas may excite an intelligent, constructive discussion, for the one thing that we desire is to get at the fundamental truths that shall help us, as physicians, to do the right thing for our patients and for humanity.

Don't overlook this paper. Look out for it. Get extra copies. Read it and reread it yourself, and bring it to the attention of your friends. Then answer it—if you can.

How can any man be weak who dares to be at all? Even the tenderest plants force their way up through the hardest earth, and the crevices of rocks; but a man no material power can resist. What a wedge, what a beetle, what a catapult is an earnest man! What can resist him?

—Thoreau.

THE COST OF MEDICINE

To the physician who dispenses his own medicines their cost seems no inconsiderable item; in fact, it has been urged by the druggists as one argument in favor of allowing them a monopoly of furnishing drugs, that the physician is thereby relieved of the expense of supplying articles to patients who may or may not pay him for either drugs or attendance. It is well, therefore, for us to comprehend exactly what is involved in the attempt to supply drugs.

When there is a drugstore within convenient reach, it is not wise for the physician to attempt to supply all his drugs, unless the conduct of the pharmacist is such as to render him an unsafe man to be trusted with the physician's reputation, or the lives and health of his patients. The physician's practice and his income are practically at the mercy of the druggist.

We have recently heard with amazement of the great syndicate formed among the druggists, one avowed object of which is to secure the run of the prescriptions delivered at stores operated by stockholders, these prescriptions to be gone over and such as seem best suited to the purpose to be employed in the manufacture of preparations to be sold by the entire body of druggists involved, as patent medicines, without the slightest remuneration to the physician whose brains are thus pirated upon. There is considerable difference between this method and highway robbery, for the latter attacks the strangers, and not those whose ill-placed confidence puts them at the mercy of such depredators.

But if the physician has a pharmacist whom he can trust, he would better leave to the latter the supply of all drugs whose preparation requires the special skill of the pharmacist, which the physician is not supposed to possess. This refers especially to the preparation of mixtures. If the physician *must* use mixtures, they should be properly compounded, agreeable to the sight, and as pleasant to the taste as it is possible to make them.

In the vast majority of cases the skilful physician will employ single remedies for single indications. The labors of the great manufacturing chemists have placed at the physician's disposal an innumerable variety of pills, granules and tablets, containing single remedies or such combinations as are most likely to be required.

The advantages of the physician dispensing this class of preparations are too obvious to require more than enumeration. He can carry an almost unlimited supply with him, one case, containing nearly thirty thousand doses, weighing less than four pounds, and being of a size which will go into the ordinary physician's satchel, or in a rather large overcoat pocket. Surely, with one hundred remedies and the above number of doses, almost any ordinary emergency may be met.

There is this peculiar advantage in the physician handling his remedies, that he acquires a familiarity with them which is of inestimable value. In reality this is the prescribing pharmacist's whole stock in trade, beyond the skill he has acquired as to

the mixing of drugs; yet he values this knowledge which comes from the handling of drugs very highly.

If you get down to the real truth of the matter you will find the druggist possessing an exalted idea of his own skill, not only in compounding but in prescribing medicines, and a correspondingly low estimate of the doctor's knowledge. A valuable prize awaits the doctor who can discover any druggist, who has been for years in the habit of prescribing across the counter, who does not believe himself more fully qualified to do so than any physician for whom he puts up prescriptions. Applications for this prize may be made at this office. It is needless to say that the fullest proof will be required, should such a phenomenon be announced.

Much, very much, is to be gained by the promptness with which our remedies may be set to work. When we are called first to see an invalid, if we have with us our supply of medicines, their administration may be commenced before a messenger could be dispatched to the drugstore. Our grandfathers understood better than we the importance of promptness in dealing with acute febrile maladies. It was their firm belief that their method of treatment was capable of aborting pneumonias in many instances, but they comprehended well that, in order to do this, disease must be taken in the earliest stages, the formative stages, in fact.

Disease has not in any way changed its nature, and if few of us speak of aborting pneumonias now, we must remember that we have dropped from our weak hands the formidable weapons of a previous era, and have not as a body substituted others as effective. With the disuse of the ancient weapons, the old belief has also gone by the board.

Knowing exactly what we are giving our patients, knowing exactly what our medicine will do, giving it promptly, giving exactly the right thing, and not something which may "answer," we have a facility in treating disease which produces corresponding results. It is remarkable to those not familiar with this method, how quickly disease responds to a very little of the right drug, administered at the right time and in the right manner. This makes practice by the use of definite remedies like pure chemicals, such as the active principles, a matter of precision, and also a matter of very little expense.

An old physician who had used the alkaloids in his practice for twenty years, informed the writer that the cost of his medicines amounted to less than three percent of his fees received. So far as he was concerned, the loss by supplying medicines was far more than made up by utilizing this same supply of medicine as a reason for asking immediate pay, instead of making a charge account. This man kept his business to himself, sharing his professional work with neither patient nor druggist. As a consequence, when the patient recovered the physician received the credit for the cure, not the medicine administered. In his patient's recommendation, it was the physician he commended to his friends and not the medicine. No prescriptions of his turned up in the hands of persons who never paid him for them.

One of the most difficult things to teach a physician is the exceeding unwisdom of telling all he knows. Patients are frequently curious as to the nature of the medicaments that benefit them. The wise physician keeps mum. The foolish one gives away the secret, and in this way squanders the resources which, judiciously managed, would bring him professional and financial success.

No matter how simple a matter appears to the physician, and for that matter even because it is so simple, let him keep his own counsel; for the secret of successful treatment, kept securely locked within his own bosom, is the most powerful lever for bringing him further practice. When the secret has once left his lips, he has lost that element of professional success.

The cost of the active principles is so trifling that most assuredly it should not be taken into account, when compared with the saving of human life and the prompt extinguishing of disease. In the latter respect the alkaloids are very much cheaper than the galenics, because disease is shortened by the prompt and effective treatment only possible with remedies we know all about. Whenever we have to wait to experiment with our

remedies, to find out what they will do and how much of it they will do, we are losing precious time, and the difference between a long drawn-out case and one which is quickly brought to an end is very great indeed.

Curiously enough, we have occasionally had to meet the objection that with the use of the alkaloids patients get well so quickly that there is no opportunity to make a long account. Nothing speaks more strongly as to the lack of business ability on the part of the physician, for surely the man who cannot succeed in showing his patient that it is worth more to him to be quickly cured than to be kept ill a long time, must be deficient not only in business acumen, but in commonsense.

The question comes up seriously, whether a man who is incapable of utilizing so obvious an advantage is really fit to practise medicine. For our own part we have never found this difficulty to stand in the way, but by going frankly to the patient and explaining to him how much better it is worth his while to pay fifty dollars for being cured, so as to return to his business in a few days, rather than pay a less amount for attendance over a prolonged period, we have found most men sensible enough to see wherein their interest lay.

This difficulty inheres to the old, miserable system of charging for each visit. When physicians will learn to estimate their services at what they are worth, instead of by the number of times they call upon the patient, many of the evils that beset the profession will be at an end.

Success is measured by service. Just in the proportion that you can give benefits to others have you a right to expect the rewards.

DOCTOR H. T. RICKETTS

We have received from the Mexican Government a handsome volume dedicated to the memory of Dr. Howard Taylor Ricketts, and a tribute to the great work which he did in our sister republic, while investigating the causes of infectious disease.

It is a pleasure to see how highly Dr. Ricketts' work is appreciated in Mexico; and from this appreciation to realize the high scientific acumen of the medical profession of that republic. In honoring the memory of Dr. Ricketts our Mexican colleagues have honored themselves, and shown that they are worthy members of that greater Republic which science has formed of its votaries in all parts of the world.

"DOCTOR OF MEDICINE"

The Interstate Medical Journal calls editorial attention to the abuse of the title of "Doctor." It is no longer distinctive of the doctor of medicine, since quacks of every degree claim the use of that honored designation. Our contemporary suggests that we adopt the European method, and write before our names the words "Doctor of Medicine," or the abbreviation, "Dr. Med." This would distinguish the real doctor of medicine from the osteopath, the optician, and the innumerable others, who, although not truly instructed, claim and exercise the right to style themselves "doctors."

The suggestion is a good one, and might be adopted with advantage. The one objection, as suggested by Dr. Ball, is that it looks like aping European customs, and we have already done more of that than is good for us.

Medicine is a battle, in which the victory rests with the wisest.—Burggraeve.

WHO STUDIES MEDICINE AND WHY

As you will see, when you read the Miscellaneous Department, this issue, we have been entertaining the medical students of Chicago. When the two last classes, Northwestern and Rush, were here, we took votes to find out from what part of the country these young men came, and what led them to study medicine.

These students came to Chicago from all parts of the world, there being representatives of England, Ireland, Scotland, Germany, Turkey, China, the West Indies, the Philippines, and nearly every state in the Union, yet naturally our schools draw their largest number from the Mississippi valley, the very heart and energy, as it is the great treasure house, of the nation.

The facts elicited of most interest were concerning the occupation of the fathers of these young men. The vote showed that

of more than a hundred present from the Northwestern class, only one was the son of a lawyer. There were no lawyer's sons among the sixty or more Rush students. In each class there were seven or eight sons of clergymen, fifteen or twenty sons of physicians, and scattering scions of men of other occupations; but the farmer boys led all the rest in numbers. In Northwestern there were between thirty and forty of these; in Rush, between twenty and thirty.

So far as we could learn there were no rich men's sons in either class, though there was plenty of evidence that most of the boys came from comfortable homes. About 20 percent were working their way through college, either in whole or in part. All of them were men of good education, practically all having had partial college training, and many being college graduates—degree men.

Now what do all these facts mean? They mean that the learned professions (at least medicine) are recruited from the social strata which *seem*, in the opinion of the "world," to lie just beneath. They are an expression of the fact that the great humanizing and organizing forces which do the work of society emanate from the mass—from the people themselves, rather than from any alleged superior class.

There is an old saying that "from shirtsleeves to shirtsleeves there are but three generations." It is pretty nearly true. The American pioneer who carves out a home in the wilderness or on the prairie, and acquired a competence for himself and family as the price of incessant warfare with nature; the old-world immigrant, who sought this new world because it meant the opportunity denied him in the fatherland, and beginning in the slums rose to comparative wealth and importance in the business world—these men, *and their wives*, are determined that their children shall be spared the struggles they went through. The man looks with envy upon the doctor, the lawyer, the clergyman, whose lives seem to them easy in comparison with their own; the woman desires the social prestige which these occupations give.

It is exactly the same process of reasoning that leads the doctor to discourage *his* son from studying medicine. One of the incentives to effort is that "My boy won't have to work like a dog, as I have had to." With success comes the fascination of wealth, the lure of the great fortune, and he dreams and plans for something of the kind for his son—a step still higher upward, with money, or what it will buy, as the big prize.

But too often the boy has been pampered. He lacks the stimulus of necessity. He has not learned to work. Life has been too easy. With leisure has come the opportunity for a slowing down of effort, for mental and moral laxity, possibly for vice—and so when the crucial test of his character comes, he fails. Back to "shirtsleeves" he goes, and his children begin again the ceaseless climb toward the goal.

The pampered son's misfortune is the farmer boy's opportunity—the long-desired chance for the young man who has had to work with his hands, who is sound of body, keen of intellect, clean in morals.

Thank God that it is so! In spite of the handicaps of wealth and position Nature evens things up pretty well in the long run. Success comes to the "fit." Fitness means readiness, preparation, and that in turn is only gained by incessant labor. "W-o-r-k" always spells success. No pampered weakling can carry off the prize. The farmer boys, the sons of mechanics, and of the foreign immigrants whose children have been brought up in the hard school of industry and economy, who have learned to know the price that must be paid for success, *these are the strong young men*, and let us be glad that they turn as naturally to medicine, knowing its difficulties and responsibilities, as ducks to water.

Young men of this character, if they are "straight" and "keep straight," are morally bound to "make good." The world of opportunity lies open before them and only their own weakness (barring unavoidable misfortune) can keep them from grasping it. They have a real grounding in the science of medicine, which was impossible in the schools of our generation; and we warn our older brethren that they must look to their laurels. But we welcome them, just the same, all of them, into our order. This constant leavening of our professional life with new blood is needed to keep us striving in-

cessantly for greater individual efficiency. Sooner or later they, too, will have to learn the lesson, as we have learned it, let us hope: *Success consists not in knowing, but in doing. He who does most for his patients will win the largest measure of reward.*

"I hope you will be a better boy," said the dominie to the street urchin who had been caught in a wrong act.
"I fink I will. I'm takin' cod liver oil ever' night."

VARIABILITY OF DIGITALIS

It is a pity that no one in this country has taken the time and trouble to make a systematic and thorough examination of the various galenic preparations of digitalis, somewhat as was done by the Kansas State Board of Health with regard to tincture of aconite. The little that has been accomplished in this direction shows that these preparations are enormously variable, probably even more than aconite, which was shown to be habitually below the official strength, in many cases showing a variability of several hundred percent from the accepted standard.

Some time ago Sharp and Lancaster, whose report appears in a recent number of *The Pharmaceutical Journal and Pharmacist* (London) examined physiologically the digitalis supplied to the public charities. They found that "a certain volume of the tincture which should have stopped the heart of a frog (Rana temporaria) of known weight, in four hours at most, had no effect at the end of eleven hours. Another specimen of tincture, said to belong to another batch, was equally ineffective. At the same time two members of the resident staff of the institution, who were unaware of our investigations, made complaint that the tincture of digitalis was worthless, adding that they had prescribed it in 15- to 40-minim doses every four hours, and in some instances 60-minim doses, without any evident therapeutic action being observed."

Sharp and Lancaster give several reasons for the existence of these weak and thoroughly undependable tinctures. First, careless collectors of digitalis often include large numbers of leaves from other plants in their bags. Second, large leaves and faded leaves, both weak in glucosides, may be included. Third, accidents or carelessness in the process of drying may lead to the breaking up of the glucosides. Fourth, there can not be any doubt that the tinctures are not always prepared with care; the leaves may not be reduced to fine enough a powder, or they may not be completely exhausted. Finally, the authors have observed that the tincture begins to deteriorate at about the thirteenth month, so that in a general way it is not desirable to use the drug after it is a year or more old.

There can be no doubt that the profession is beginning to realize the dangers and uncertainties of galenical practice. Eventually it will turn to the active principles. Admitting the complexity of the chemical problems involved in the separation of the digitalis glucosides, the advantages of using them, and with therapeutic discrimination, are so manifest that physicians are bound to take them up, and that right soon. Definiteness and potency the physician must have, and with no drug are these qualities more essential than with digitalis. The doctor who has had some experience with a good digitalin will not turn again to the tincture or fluid extract.

HOW TRADITIONS SURVIVE

One hundred and twenty-six years ago Withering of Birmingham introduced digitalis to medical practice. At that time he gave directions that the leaves intended for medicinal purposes should be gathered the second year, at the supposed time of the greatest activity of the plant, that is, before or at the time of flowering, in June or July. Further, it was directed by Withering that plants growing wild be employed, as being more potent than those grown in gardens.

Withering's prestige was so great that these ideas have been accepted, almost without question, since 1785, and have been embodied practically unaltered, in our pharmacopeias. Closely associated is the idea that only English digitalis leaves are satisfactory; that German leaves are unreliable and the American plant generally worthless.

Sharp and Lancaster found that "a good reliable tincture could be made from first year's plants alone." They also observed

"that leaves were intensely bitter [hence were presumably active] long before the time of flowering and long after the period of flowering, provided the weather was dry and the plants had not been soaked by heavy and continuous autumn rains or nipped by frosts." Their experiments also showed the wild plants and the cultivated plants about equally potent.

These observations agree with those of Worth Hale, of the Hygienic Laboratory of the Public Health and Marine Hospital Service. In a recently published *Bulletin* he reports tests of two batches of first-year American garden-grown digitalis, side by side with selected second-year English leaves. One batch of American leaves was 40 percent more active than the English; the other batch 28 percent more active.

While, of course, these tests are not conclusive they show that *we have been taking our digitalis knowledge largely on faith and tradition.* Only one thing seems to be certain, and that is, that digitalis is an exceedingly variable plant and that "leaves from the same locality may vary widely in activity not only at different harvests, but, what is equally important, leaves of the same locality of the same harvest."

The amount of traditional medicine surviving in our books is enormous. The digitalis example is only one. Hundreds of other instances can and will be dug up as the therapeutic renaissance goes on.

CONSISTENCY, THOU ART A JEWEL!

JEWEL NO. 1.

The editors of the Association *Journal*, the trustees of the American Medical Association, the Council on Pharmacy and Chemistry of that body, the cooperating editors of the official state journals, all these eminent gentlemen for several years have been busily engaged in upbraiding us lesser lights of the independent medical press for foisting upon the medical profession, advertising and otherwise inculcating, advising and permitting, the use of patent and proprietary "nostrums" of divers and several kinds.

Tempora mutantur et nos illis! Of late not a single number of our revered colleague and contemporary, the *Journal of the American Medical Association*, rarely a number of the other "official" journals, state and national, has appeared without some laudatory comment, remark or advisement relative to the virtues of that fancifully-named, profitable, proprietary, patented nostrum, Salvarsan! And not a word of protest from the supraethical "high-brows."

Oh, inconsistency, thy name is "606"!

(*To be Continued.*)

There are millions of positions in the busy world to-day,
Each a drudge to him who holds it, but to him who
doesn't, play;
Every farmer's broken-hearted that in youth he missed his
call,
While that same unhappy farmer is the envy of us all.
Any task you care to mention seems a vastly better lot
Than the one especial something which you happen to
have got,
There's but one sure way to smother Envy's heartache
and her sob;
Keep too busy at your own, to want "the other fellow's job."
—Strickland W. Gillilan.

"THE UNITED DOCTORS"

A friend of mine here in Ravenswood who has just received a country paper from "down home" just told me something which he saw in it that struck him as mighty funny.

There was a big announcement in the advertising pages, that "The United Doctors will be in Town Tomorrow." A little investigation disclosed the fact that the "United Doctors" consisted of just one man, but this doctor was a composite of numerous medical sects, a *multum in parvo* (with emphasis on the "*parvo*."). He was an allopath, a homeopath, an osteopath, a hydropath, in fact, he had combined in his single person all the "paths" which (according to one witty individual) "lead to the grave."

While this is funny, how serious it is. The most absurd, the most dangerous delusions and superstitions concerning the practice of medicine are hugged eagerly to the breasts of thousands of poor, suffering, foolish individuals, who undoubtedly see in the asinine folly of a man like this, Munyonized "hope" to the *n*th degree.

Will the people never learn? No, Brethren, they never will learn unless we take the trouble to teach them. And that puts the problem right squarely up to *you*. What are you doing to teach them better in *your*

community. Are you sitting quietly in your office, languidly chewing your fine cut, spitting contemplatively out of the window, and wondering why business doesn't come your way?

There is a battle here for us to fight, and it is worth fighting for. If you do not feel it expedient to make open personal warfare on quackery, this much you can do. Secure a supply of reprints of Dr. Wm. J. Robinson's splendid article upon "Scientific Medicine vs. Quackery" (which has been running in CLINICAL MEDICINE) and put them into the homes in your community. When "your folks" know just how the fakers work their tricks, it will not be a very easy matter for quacks like this "United Doctors" to break into your town and carry away the shekels which should be reposing peacefully in your own pocket, or deposited to your credit in the local bank.

If you want any of these Robinson reprints, we can supply you at the rate of $2.00 a hundred. If you have the nerve to stir things up (and why haven't you?) it will be a good plan for you to order a few today.

The chief reason that everybody is not successful is the fact that they have not enough persistency. I always advise young men who write me on the subject to do one thing well, throwing all their energies into it.—
—John Wanamaker.

WITHHOLD THE CHLOROFORM

In *The Medical Times*, Beverly Robinson says: "The wisdom and horse-sense of the old practician when dealing with disease are frequently more valuable to patients than the most refined and latest acquisition of the junior physician."

"While it is a great mental satisfaction to establish the diagnosis and prognosis of a case as accurately as possible, so far as the judicious care of these cases is concerned it does not make much difference practically. We have only just so many reliable remedies in the drug line, and they are not many; and as to nursing in a rational and useful way, or the employment of physical methods of amelioration, the really useful ones are fairly well understood by the bulk of good practitioners of experience."

Dr. Robinson carefully distinguishes between real advances and simple fads. He says that not one operation will be performed ten years from now, where ten are done today, and condemning the suffering organ to removal will be looked upon as a reproach in the future.

Moreover, he states that finding the tubercle bacillus does not complete the diagnosis or necessarily indicate the prognosis, since there are varying degrees of virulence with this microorganism. Whatever may be the reason, some strains of tubercle bacilli are much more malignant than others. This may be due to special noxæ, attending the bacillus, but more likely is to be explained by the difference of the soil in which it is implanted. The resisting power of the individual, has very much to do with the results of any infection.

"AUDACITY"

Under the head of "Audacity," Dr. Scudder publishes in *The Eclectic Medical Journal* a brief editorial, so remarkable in some respects that it deserves notice.

In this publication he takes us to task for having had the "audacity" to question a statement that emanates from Germany! Unheard of! Certainly we see no recourse but to plead guilty of *lêsé majesté* and throw ourselves on the mercy of the court.

Eclecticism grew out of an American revolt against the dominance of European ideas and methods. It demanded originally that due attention should be given to American remedies, and that when these were as good or better than the European, we should not continue the use of the latter simply because they were European.

We have not the least particle of prejudice against anything European, but we are Americans, and in the case of ideas, or of remedies, we stand ready to take and adopt the native product when it is better than the imported. We have a very great respect for German medicine, but when it comes to accepting anything which comes from Germany as conclusive, we draw the line. We will accept anything German if it is right, but we are not surrendering our right of judgment, of opinion and of action, to the highly cultured products of the Teutonic school

Prof. Tschirch, the "authority" quoted by Prof. Scudder, is a great man, and he knows quite a good deal about drugs, and especially about alkaloids; but neither he nor any other man who has ever lived knows all there is to know; and when Prof. Tschirch says something which we do not believe is true, there is no reason why we should not say so, and continue thinking it, until we are shown to be wrong.

I fear that Dr. Scudder is finding difficulty in holding people within the little corral which he and his immediate friends have built around them. The big, wide, developing "outside" world of Science has too many attractions to keep thoughtful men perpetually penned within narrow bounds.

Strong souls within the present live,
The future veiled, the past forgot;
Grasping what is, with hands of steel,
They bind what shall be to their will.
—Lewis Morris

CORYZA + GELSEMININE = O

A doctor's wife puts me the following query: "Did you ever try gelseminine to abort a coryza?"

No, curiously enough I never did, although gelseminine is one of my many hobbies, and I have learned to look upon it as one of the most valuable remedies in my case. To abort a coryza I usually rely upon inhalations of formalin, and on calx iodata, of which I take or prescribe two grains and repeat every ten minutes until ten to twenty grains have been taken, or until the irritation of beginning coryza has ceased. One or other of these two remedies (or both together) almost certainly succeeds if used quickly enough; but if the attack has gone on too far to be cut short, I have relied mainly upon gelseminine to relieve the symptoms and lighten the attack. I shall take the lady's suggestion, however, and give gelseminine a trial in my next case, beginning with 1-50 grain, allowing it to dissolve on the tongue and to be absorbed as much as possible from the mouth, repeating this dose every hour if necessary.

During the last month the writer has suffered the severest cold he has encountered for many years. The fault is exclusively his own, since he did not take the trouble to push the button and summon a messenger to get him some calx iodata, when he began to sneeze.

This cold is peculiarly aggravating from the fact that as soon as the victim gets into bed the cough commences, which continues indefinitely, to his great exasperation and distress. There is not much cough during the day, but hoarseness so descided as to interfere with his favorite pastime of lecturing to medical students.

Various remedies gave some relief. The other evening he was driven to the use of codeine to obtain some amelioration. A milligram of codeine (1-67 grain) allowed to dissolve on the tongue, repeated every fifteen minutes for three doses, sufficed to give some hours' rest. The next night it required nine granules to obtain this. The third night he took a centigram of codeine, (1-6 grain) which gave him just two hours rest; and it required three centigrams, or 1-2 grain, to afford a reasonable amount of sleep throughout that night. Here was the genesis of the establishment of a habit, since the affection returned with increased vehemence each night.

Next night he dropped the codeine and substituted emetin, taking two centigrams, 1-3 grain. The relief was fully as great as that from the codeine. In two hours he awoke coughing, when three centigrams (1-2 grain) were taken. This lasted until 5 a. m. when awaking again with a cough he took four centigrams, 2-3 grain. As a result of this slight vomiting occurred, but the cough has not been as bad since, and relief has been obtained with smaller doses of emetin, until on one night one dose of three centigrams endured from 10 p. m. until 7 a. m. The next morning saw less cough, less irritation and less hoarseness than any time for nearly four weeks; so that after all we come back to the fact that the very best expectorant in our possession for acute respiratory catarrh is ipecacuanha or its most valuable active-principle, emetin.

In this respect the writer has repeated a curious observation made previously, and that is that no remedy, not even emetin, so quickly induces a loosening of the cough by increasing the discharge from the respiratory tract as apomorphine, and that even in

doses of 1-10 grain it does not cause nausea when taken in the stomach or on the tongue. But the effect is not curative. It wears off, leaving the inflammatory process to go on as if it was simply delayed slightly by the remedy. It quickly gives temporary relief, but it does not cure.

Emetin cures. Hereafter I shall use emetin, pushing it with small and repeated doses until the beginning of nausea is manifested, by which time the strength of the attack is broken.

The declining stages of the malady require small doses of sanguinarine, a milligram (1-67 grain) every two hours, to stimulate the vitality of the affected tissues and induce curative action.

Don't stop to think if you can think without stopping.
The distant mountains, that uprear
Their solid bastions to the skies,
Are crossed by pathways that appear
As we to higher levels rise.

—John G. Whittier.

BATHS IN FEVERS: THE TECHNIC

While the advice to employ baths in typhoid fever is generally given in textbooks and monographs, the technic is rarely described with the exactitude one might wish. For like most other things, there are a right and many wrong ways of giving a bath. Milhit, in *Le Monde Médical*, gives the following procedure:

Give the bath in the sick-room. Change the water for each bath. Attendants must guard against infection by the bath water. Test the temperature of the water just before the bath. The patient must be nude. Raise him with the arms under the shoulders and knees; let him into the water gently, first applying petrolatum to the buttocks. Then prepare the bed. Throwing back the covers, place a mackintosh on the mattress and over this a sheet.

The patient always grumbles at the water, shivers, and wants to get out, saying he is sick or faint. Pay no attention, but keep a finger on the pulse, and the discomfort subsides. In ten minutes he feels cold, and soon shivers in reality, with intense discomfort, when he should have some hot drink with a little brandy, the limbs being lightly massaged. If the torpidity lightens, the teeth and mouth may be cleaned. Do not leave the patient alone while in the bath. If there is faintness, limit the immersion to ten minutes; if collapse threatens, remove him at once. Otherwise a bath of a temperature of 82° F. may be continued twenty minutes. The physician should be present at the first baths.

After removing the patient from the bath, hold him to let the water drip off, then place him in bed without any rubbing or drying, cover well and leave him twenty minutes. The reaction that then occurs is very disagreeable, and shivering may increase, but gradually is replaced by a sense of comfort. Some drink should be given when this begins. If reaction is imperfect, the bath was too long-continued and too cold. In that case apply hot bottles to the feet, cover with warm sheets, and give hot drinks.

After the twenty minutes, as said, the sheet and mackintosh are removed and the patient is quickly put in a warmed robe, the buttocks are examined, petrolatum and powder are applied if needed, and, lastly, the temperature is taken in the rectum to determine the benefit secured. There should be a reduction of one or two degrees.

While there are few contraindications to the baths, one is absolute—suspected perforation or peritonitis. Free intestinal hemorrhage or decided faintness calls for suspension of baths for some days. Cardiac symptoms or syncope only indicate a close watch while the patient is in the bath. These are all—nervous prostration and menstruation are not contraindications.

After the third bath the water should be quickly reduced to 82 or 85° F., but in hyperpyrexia or if the fever is not diminished the water may be lowered to 80 or even 75 degrees. At 70 degrees the baths are very distressing and may induce pulmonary hyperemia.

If despite baths at as low as 75 degrees the fever remains above 104° F., then (1) continue the bath for thirty minutes, with a big ice-bag on the belly; or (2), if this fails, repeat the baths every two hours, of twenty minutes each.

In ordinary typhoid fever the first bath should be at 88° F., then 85°, then 82°, but never lower, a reduction of two to three

degrees being enough. Whenever the temperature (taken every three hours) exceeds 102 degrees, the bath is to be repeated; or even below this point if headache or nightmares occur, or if 101 degrees is reached at 6 o'clock p. m. If no baths are given during the night, the last one should be at 9 in the evening and the first at 7 in the morning.

If necessary, the baths may be replaced by wet-packs, or cold ablutions with diluted vinegar. Small doses of quinine or coaltar antipyretics may be also employed.

As adjuvants, Milhit recommends that during the bath a large sponge dipped in water at 66° F. be slowly squeezed over the patient's head, but not the face; or water at 66° F. may be poured over the head, if headache has been troublesome. This may be repeated every ten minutes. This is not always well borne.

Sometimes the patient is restless, talkative and delirious, with fever below 100° F., prostration becoming marked, with tendency to hypothermia. Then the body-heat must be raised to 102° or 103° F., by baths between 90° and 96° F., when the patient will quiet down and the condition improve. Warm baths are also required by pulmonary or cardiac complications.

If collapse threatens, Chantemesse's method should be employed: Put in just water enough at 95° F. to reach the navel. Have at hand a pitcher or two of water at 55 degrees, seat the patient in the bath and pour the cold water over him. Then quickly take him out, rub down, roll in a sheet and warm by means of hot bottles. Reaction will be immediate. Milhit terms it a "veritable resurrection." The patient awakes, his eyes bright, the pulse improves, and the heat rises. If the case is critical this may be repeated in half an hour, otherwise in two or three hours. Under this the temperature has risen from 95° to 103° F. in a few hours. Sparteine or caffeine may also be given. One must be sure this is really collapse and not intestinal hemorrhage or perforation. The measure must not be abused, or pulmonary hyperemia may result.

The man who advocated the foregoing treatment knew nothing of the part played in typhoid and other fevers by fecal toxemia, or that the fever, delirium, headache, prostration, and so forth, depend largely on this factor and subside when the bowels have been thoroughly emptied and disinfected. Accepting the dictum that the baths should be employed when the temperature rises to 103 degrees, they are rarely necessary, because with the clearing and disinfecting completed the temperature does not rise to that point. Should it do so, it is a sure indication that the bowels need attention. At best the baths, as will be seen by the foregoing account given by an enthusiastic advocate, are troublesome, precarious and disagreeable. If also unnecessary, why use them? Since the crazy fad of "anything but drugs" seems to be subsiding, we may return to common sense and an intelligent utilization of the remedial powers residing in medicine.

Had Columbus, half seas o'er,
Turned back to his native shore,
Men would not, today, proclaim
Round the world his deathless name.
So must we sail on with him
Past horizons far and dim,
Till at last we own the prize
That belongs to him who tries
With faith undying!
Own the prize that all may win
Who, with hope, through thick and thin
Keep-a-trying.

—Nixon Waterman.

A CASE OF ACONITE POISONING

In *The Lancet*, Inglis describes a case of poisoning from an unknown dose of aconite, which was swallowed by mistake. The quantity was roughly estimated to be sufficient to kill six persons. The treatment consisted in the hypodermic administration of strychnine and digitalis, with brandy *per rectum*, and artificial respiration, which was kept up for six hours. At the end of this time improvement set in, and the patient recovered. At three different times the patient appeared to be dead after clonic convulsions.

She was found lying on the floor, speechless, cold, pale, the skin moist, pulseless, respiration very faint and irregular, pupils dilated and insensitive, temperature 96.6° F. No ptosis of the eyelids. At intervals she complained of terrible gastric and abdominal pains. The body was acutely alive to a

sensation of irritation and prickling of the skin, this being succeeded by numbness. The mind was clear and unaffected except during the convulsions.

Cases of aconite poisoning are not infrequent, the tincture usually being taken in mistake for some other liquid. Happily for the individual, the tincture of aconite of the pharmacies is very frequently even less toxic than seemed to be the case in the instance recorded here.

Physicians who use aconitine generally, know that it is of uniform strength and employ it according to the excellent rule given by Prof. Shaller. Thus administered it is perfectly safe and always efficient.

Many a physician who says he is wedded to his profession undoubtedly married in haste and is repenting at leisure.—Medical Review of Reviews.

PERCUSSION OF THE KIDNEYS

In *The Medical Record*, February 4, Prof. Otto Lerch supplies an exceedingly interesting paper on percussion, especially as applied to the kidneys.

The differences reported by various observers depend partly on their varying acuteness of hearing, and especially on the strength of the percussion stroke. One man will think that stroke a light one, which another will look upon as far too strong. A light and delicate stroke must be used to obtain trustworthy results. Dr. Lerch finds the plexor-pleximeter percussion the easiest to learn and giving the best and most uniform results. As pleximeter he uses a thin ivory plate, as plexor a hammer with black rubber or ebony handle, and heavy steel head with black rubber tip.

The textbooks on diagnosis are unanimous in condemning percussion of the kidneys as valueless. Dr. Lerch, however, finds that these organs can be mapped out with accuracy and ease, thus showing changes in size which are very slight indeed.

Percussion is best performed with the patient lying face downward, with a cushion under the belly to put the muscles of the back on tension. The location of the percussion dulness shows that it is actually due to the kidney. The form of the dulness corresponds to the form of the kidney. In movable kidneys with palpable organs the check is perfect, since percussion shows the displacement of the organ. Usually the kidneys at least partially return to their natural position.

In every case the clinical symptoms correspond to the percussion figures. If these indicate a contracted kidney, more or less advanced, one or both will be found decreased in size. If congestion or large white cirrhotic kidney is diagnosed, the percussion figure will bear out the diagnosis, if it is accurate. In movable kidney we find the expected downward displacement of the projected figure.

Dr. Lerch tested his method on the cadaver in four cases, fixing the kidney by the use of hat-pins. These investigations were resumed at the Royal Augusta Hospital of Berlin, in connection with Prof. Oestreich. Nine subjects were employed, and on opening the abdomens the conditions were found to correspond with those determined by percussion.

Dr. Lerch sums his paper as follows:

"By replacing the stroke with the drop in percussion, we have a method that enables us to make out with accuracy and ease the organs situated close to the body wall, or deeply situated, the percussion lines corresponding sharply to the organs. We have a method superior to the usual method of percussion, in that it permits us to judge from the rebound of the hammer the change of vibrations and the percussion note at one and the same time, and especially that it eliminates largely the individual element and makes results uniform.

"Further, according to the most prominent clinicians, kidney percussion has been impossible except in cases of very much enlarged kidneys, when it is for practical purposes useless. My methods give good results in kidney percussion under any conditions and with any patient, supplementing the diagnosis of the diseases of the kidneys and giving a ready and easy means to determine the actual size and location of the kidneys, which is of value in all cases, as stated before.

"Again I will repeat that the drop is impossible unless the hammer is very lightly held."

Therapic Aspects of Epileptic Pathophysiology

By JAMES G. KIERNAN, M. D., Chicago, Illinois

THE limited conception of epilepsy taught and often held, especially by subsidized college professors, interferes with diagnostic, prognostic and therapic action, since these are indivisible. Diagnosis of recovery is as important as diagnosis of the disorder itself. Any definition of epilepsy must include all its clinical phenomena. The following, offered by E. C. Spitzka thirty years ago, in my judgment is the most complete in this feature:

Spitzka's Definition of Epilepsy

"Epilepsy is an encephalic morbidity without palpable characteristic lesion, shown in explosive activity of an unduly irritable vasomotor center, leading to complete or partial loss of consciousness, which may be preceded or followed by various phenomena expressing the undue preponderance of some cerebral districts and the suspended inhibitory influence of others."

The vascular phenomenon which so frequently accompany an epileptic attack are not absolutely essential factors of epilepsy. Sudden anemia of the higher nerve-centers may produce convulsions, but it does not follow from this action that arterial spasm is a necessary cause of the epileptic fit.

Convulsions, while a phenomenon of epilepsy, is neither an initial nor a constant one. Irritative "focal" lesions of the brain may produce convulsions, but this does not demonstrate that idiopathic epilepsy must have a similar origin. An area of inflammatory softening in or near a brain district in relation to the arm-muscles may produce epileptiform spasms beginning in the muscles whose center is affected, which extend to the other muscles of that half of the body, or suddenly to the entire voluntary muscle system.

This does not prove, however, that the epileptic discharge must have extended through the cortex by irradiation. This is certainly not the case where transition from the localized or "focal" spasm to the general convulsion is sudden.

Primary irritation has determined secondary irritability of the reticular gray matter of the brain isthmus, particularly of the pons and medulla, which is the great convulsive center. The characteristic phenomena of the epileptic onset have been produced in animals deprived of the cerebral hemispheres. A slight puncture with a thin needle in the reticular gray matter suffices to produce in the rabbit both the true epileptic character and the automatism noted in aberrant attacks.

All the great nerve-strands conveying motor impulses of voluntary, automatic, or sometimes of reflex character are united in a comparatively small area of this nerve segment. Relatively slight disturbance at this point will produce functional disorder involving the whole bodily periphery.

If sensory irritation of a given spinal nucleus be continued until it has produced a reflex movement in the same segment, any resultant action which may occur does so, not in the next or succeeding planes, but in the

medulla oblongata. The motor reaction is then expressed in laughing, crying or deglutitory spasms, and if the irritation be great, in epileptic and tetanic spasms likewise. Laughing, crying, and deglutitory spasms are readily produced by molecular oscillations induced by the irritation which travels along associating tracts from the spinal segment to the location in the medulla of the nerve nuclei presiding over facial, laryngeal, and pharyngeal muscles.

How epileptic and tetanic spasms consisting in movements whose direct projection is in the cord, not in the medulla, can be produced by medulla irritation is not at first apparent. There are scattered nerve-cell groups in the medulla without connection with the nerve nuclei or connection with the longitudinal associating strands. These cells constitute a presiding center over the spinal system. No spinal center compares in influence with the cord as a whole.

Evolution of the Medullary Center

Like other higher differentiations, elaboration of this medullary center was gradual. The frog's medulla has acquired the power of reproducing general spasms, a power still retained by the cord. Medulla action is here not so well marked as in mammals. The reticular ganglion of the adult medulla is not part of the central tubular gray matter. While originating from this in the embryo, it has been finally isolated from its mother-bed. It constitutes a second ganglionic category. The association fibers bringing it into functional union with the first category formed by the spinal gray in lower animals have so assumed the position of projection fibers in the higher as to constitute a second projection tract. Together, both form a second projection system.

The scattered medullary gray matter, though its cells as a rule are diffusely distributed, constitute a large ganglion with numerous many-sized multipolar cells, many simulating in shape and some exceeding in size the "motor" cells of the lumbar enlargement. They constitute, so to speak, a reticular ganglion scattered in the reticular substance of the medulla from the upper end of the fourth ventricle to the pyramidal decussation.

The cells of the reticular formation are connected with the nerve nuclei on the one hand, and with longitudinal fasciculi which, since they run into the cord, terminate either in the gray matter or the nerve roots directly, for nerve-fibers do not terminate with, as it were, blind ends. The mammalian reticular ganglion is scattered among fibers which come from the higher centers. The reticular ganglion, hence, is an intercaler station for fibers from a higher source. Originally the ganglion was an independent station.

In reptilia this body of cells is too considerable merely to subserve the purposes of termination in them of the few cerebral fibers possessed by this order of animals. The vertical strands, moreover, are notably increased in their passage through the medulla oblongata.

The Medulla Oblongata the Regulator of Rhythmic Movements

The medulla oblongata with its reticular ganglion is the great rhythmic center. In fish the movements of the operculum and mouth, in sharks those of the spiraculum, in perennibranchiate amphibians the branchial tree, in the infant the suctorial muscles, in all vertebrates the movements of deglutition, of the heart and of the respiratory muscle—all rhythmic movements, in short—are under control of the medulla oblongata. Its early differentiation is related to early manifestations of rhythmic movements in the embryo and to their predominant importance in lower animals.

Rhythmic movements may, however, be spinal, may even be controlled, as in invertebrates, by peripheral ganglia (heart of embryo). Higher development concentrates rhythmic innervations at a point where anatomic association (the expression of the interinfluence of these movements) may be affected.

Physiologic pathology of the epileptic attack is evident in the condition of the epileptic in the interval as well as in the explosion itself.

The epileptic constitution is characterized by general lack of tone associated with exaggerated reaction and irritability. Thus the pupils are at once widely dilated and unusually mobile. The muscular system, though

generally related, manifests exaggerated reflex excitability. The mental state presents at once great indifference and undue irascibility. The vascular system is depressed in tone in the interval, but displays rapid, decided changes under excitation.

The nervous system as a whole resembles an elastic band which, continually on the stretch, overshoots its mark when one end is let go. Under normal circumstances, being less stretched, the band is not liable to fly afar when the check is removed. An irritation which in health produces muscular restlessness, accelerated respiration and pulsation, and various mental phenomena within normal limits, in the epileptic causes similar but more intense phenomena.

Mechanism of an Epileptic Explosion

The nervous irritability of an epileptic manifests itself in one direction especially. An important cerebral vasomotor center is diffused through an area between the thalamus and subthalamic region and the pyramidal decussation below. Irritability of this produces the sudden arterial spasm in the carotid distribution which is so characteristic a feature of the epileptic onset. Simultaneously with artery contraction the pupil undergoes an initial contraction, and relaxation instantly results in both cases. Sudden interference with the brain circulation produces unconsciousness and destroys the checking influence of the higher centers on the reflexes in an analogous manner to that of shock.

Meanwhile there has been a sudden deprivation of arterial blood and a sinking of intracranial pressure, so far as the great cerebral masses are concerned, and as sudden an influx of blood to the unaffected vertebral artery district, whose territory thereby becomes hyperemic. As a result, the great convulsion center (the medulla) being overnourished, functional excess (that is, convulsion) occurs, unchecked by the cerebral hemispheres disabled by their nutritive shock. Epileptic unconsciousness and coma resemble shock more than they do cerebral anemia or syncope.

Impeded return circulation of venous blood now comes into play. This venous blood, through accumulation of proteid substance, acts as a toxic agent, producing the severer symptoms noted during postconvulsive periods. The elastic-band characteristics are further shown: First (*a*) in the contraction of the retinal artery; (*b*) the initial and very brief contraction of the ordinarily dilated pupils; (*c*) the sudden pallor of the countenance. Secondly, (*a*) in the secondary expansion of the retinal arteries; (*b*) the secondary dilatation of the pupils; (*c*) the secondary flushing of the face. Thirdly, in the conditions found in those dying immediately after severe convulsive seizures or in the status epilepticus.

Petit-mal

Epilepsy presents an enormous number of subgroups deviating from the ideal convulsive form. In petit-mal the initial arterial spasm is confined to the surface of the hemisphere, leaving the thalamus ganglia undisturbed, causing momentary unconsciousness, or abolition of cortical function, without the patient falling, while his automatic ganglia still carry on their functions. At the same time, with the lesser spasm, there is less extensive sinking of intracranial pressure and less consecutive collateral hyperemia of the lower centers, and therefore no convulsions occur.

Sometimes the arterial spasm does not affect the entire cortical surface simultaneously; some one trunk may be more pervious, and an afflux of blood may occur in its special field, where certain impressions and motor innervations are stored. As a result, the function of the relatively well-nourished territory is exalted. If it be a sight-center, sights, colors or luminous spectra are seen; if it be an olfactory, odors are smelt; if a tactile, crawling, tingling, and cold sensation; if a speech-center, cries, phrases and songs are uttered. The manifold epileptic aura is simply an exaggerated but isolated and limited cortical function.

The aura recurs through the well-known physiologic law that any nervous process, morbid or normal, having run through certain paths, these paths are henceforth paths of least resistance for that process. To the same law are due the peculiar convulsive equivalent, pre- and post-epileptic

mental states. These epileptic mental states may occur whether there be grand-mal or not.

Masked, or larvated, epilepsy may be merely an exaggeration of the epileptic character.

Convulsions

The relations of epilepsy to insanity are by no means simple. Epilepsy may be merely a complication, or a sequel, or a preliminary to recovery in certain psychoses. None of these cases, however, belong to the true epileptic alienations. Epilepsy produces these psychoses, and they are essentially epileptic at bottom. Two broad types of epilepsy are usually recognized—the epileptic mania and the epileptic dementia—but outside of these occur numerous mental manifestations.

Varieties of Epilepsy

Krafft-Ebing divides the mental manifestations arising from epilepsy into: The psychical degenerations (epileptic dementia); the transitory epileptic psychic disturbance (preceding, following or replacing convulsions) further divided into: (1) Epileptic stupor. (2) States of imperfect or dazed consciousness with fright (Falret's *petit mal intellectuel*); with frightful delusions and hallucinations (Falret's *grand mal intellectuel*) with expansive religious delusive conceptions; with dreamy stupor; with dreamy stupor followed by rapid flights of ideas; the epileptic psychoses which stimulate ordinary types of insanity, but present certain symptomatic peculiarities and have an epileptic basis.

E. C. Spitzka makes the following division, valuable for clinical purposes: *First*: the epileptic psychic equivalent, which replaces the epileptic convulsions. *Second:* The acute postepileptic insanity, which almost immediately follows the convulsive attack (the ordinary postepileptic stupor being included as part of the convulsion), or the psychic equivalent of such a convulsive attack. *Third:* The preepileptic insanity which precedes the outbreak of the convulsive attack, or its equivalent, and increases up to the amount when the paroxysm explodes. *Fourth:* The purely intervallary epileptic insanity, which neither immediately following nor preceding a paroxysm occurs in the interval between the convulsions. *Fifth:* Epileptic dementia, which may complicate any of these psychoses and render their diagnosis, when occuring in old cases, difficult.

According to C. H. Hughes there may be ante, post, or supplemental paroxysms of maniacal automatism in which acts, apparently in a volitional manner, but without free or voluntarily directing will, are performed. These acts may be violent or incendiary, or otherwise destructive and criminal, as well as harmless.

According to Falret: "A remarkable phenomenon which frequently complicates the incomplete attacks of epilepsy, or in the intervals between two perfectly developed attacks, deserves mention. The patient seems to have come to himself; he enters into conversation with those persons who surround him; he performs acts which appear to be regulated by his will, and seems to have returned to his normal state. Then the epileptic attack recommences, but as soon as it has ceased and the patient has recovered his reason, it is found that he has not preserved any recollection, either of his words or acts which were said and done in the interval of the two attacks." Under the head of "*petit mal intellectuel*," Falret describes a condition which may continue for several hours, or several days, after the postepileptic stupor has subsided, in which the patient becomes sullen, deeply dejected, very irritable, and feels an utter inability to fix his thoughts and control his will. Under the term "*grand mal intellectuel*" he describes an analogous condition of longer duration, intermingled with alternate stupor and furious excitability.

Although not correlated, these forms have long been recognized by nearly every alienist of repute. Griesinger says: "Striking psychic disturbances sometimes occur before the attack; sometimes a confusion and obscuring of the consciousness, resembling drunkenness; sometimes deep dejection; sometimes an extremely suspicious, angry disposition; sometimes violent hallucinations of any and all the senses immediately precede the attack. During the attack, in fully developed cases, the psychical faculties

are completely suspended, the patient can not remember any act which happened at the time, although his fixed, terrified, astonished expression gives the impression that he is suffering severe mental pain. Attacks may precede and alternate with intermittent convulsions. Others, after partial or complete loss of consciousness, execute combined movements, which correspond to a state of dreaming of a varied, but, as a rule, of a depressing nature."

The epilepsia larvata of Morel, the masked epilepsy of the English authors, was described first by Falret, and soon after independently by Morel.

"The invasion of these attacks is sudden. There is always loss of memory of them. The acts done in them are instantaneous and of an exceptional violence. Hallucinations, when present, are always terrifying, and at every attack the same phenomenon presents itself. The masked epilepsy condition presents peculiar symptoms, among which may be found at the onset excessive instability and mobility of character. Later, mental transformations reproduce themselves in a true periodicity."

Socalled "masked" epilepsy seems the purest form of epileptic psychic equivalent. There are, then, based on chronology, five varieties of mental alienation due to epilepsy —the preepileptic insanity, the psychic equivalent, the postepileptic insanity, the intervallary insanity, and epileptic dementia.

Frequency of Occurence

Epilepsy produces, in my experience, about 4½ percent of the hospital cases of insanity. Regarding the frequency of the various forms it may be said that epileptic dementia occurs most often in hospitals.

The psychic equivalent alone is more frequent than usually supposed. The intervallary epilepsy occurred, in my experience, in about 2 percent of the epileptic alienations. The equivalent not infrequently manifests itself in the form of moral perversions only. The patient is a dipsomaniac, or exhibits sexual perversion, or is a kleptomaniac during the psychic equivalent, being perhaps perfectly moral and upright at other times. Sometimes murderous attacks are made during the psychic equivalent, which ceases with the crime. Checking epileptic attacks by treatment may bring on this condition, as in cases reported by Bannister, Stark, Spitzka, Harriet Alexander, W. A. Hammond, Voisin, Hughes, Moyer, and in others under my own observation. Hughlings Jackson insists that when mental symptoms appear to replace the fit there is a very transitory epileptic paroxysm, but he admits that very frequently no signs of such are discernible.

Epileptic Psychoses

The epileptic psychoses, as a rule, are characterized by extreme violence; by, not infrequently, initial hallucinations; and by sudden subsidence of such symptoms. Epileptic dementia, when present, may mask all these, but even in dementia epileptics display marked treachery.

According to Magnan, Delasiauve, and Féré, in epileptic dementia, varying with the gravity of the mental condition, the attention is enfeebled and null; memory is confused, untrustworthy, and at times entirely lost; conceptions are obscure, abortive, or false; following a train of thought is painful, incorrectly done, and at times impossible; the imagination is not markedly developed. From this intellectual mutilation results mental enfeeblement.

In epileptic insanity the alienist often has to reason, so to speak, in a circle; the character of the immoral act suggests epilepsy; the physical and other evidences being found, the act is regarded as of epileptic origin. These physical symptoms become of value as corroborative evidence.

Physical Evidences

Certain authorities have laid stress on asymmetry of the face and skull as evidence of epilepsy. Howard has found such asymmetry in 80 percent of the insane epileptics coming under his observation. Garel has found 55 percent of the epileptics coming under his observation to present asymmetry. This symptom is, however, chiefly of value as leading to further investigation and as evidence of congenital defect.

Echeverria, who is corroborated by Howard, claims that the temperature of epileptics is always below normal. Echeverria also calls attention to a marked lividity conjunc-

tiva injection, and at the same time to a frequent expression of hebetude and astonishment.

Epistaxis is not infrequent during or after the paroxysm. Echeverria, Spitzka, and L. C. Gray lay stress on a dilated mobile pupil (hippus or chorea iris) as further evidence. It should be remembered that attacks occur at night, and blood upon the pillow and other circumstances may give indications as to the possible existence of nocturnal epilepsy. If the suspected attack of epileptic insanity be, as it often is, very brief, there will be noticed, just precedent, great irascibility succeeded by sudden pallor, furious violence, and slight after-stupidity.

Often an epileptic displays great religious tendencies. When a lunatic evinces marked religious delusive conceptions, is at the same time in a condition allied to stupor, kneels and prays to the physician, epilepsy may be suspected. I had a marked illustration of this in a patient who entered Manhattan State hospital, in consequence of developing insanity at the 1876 Moody-Sankey revival in New York. His insanity presented the character just described. His hereditary history was bad. After some months' residence in the hospital he had several epileptic attacks.

The Predominant Elements

The great elements in epilepsy are the cerebral irritability and excitability and the autotoxic state already described. Elimination is checked, whence toxic material accumulates in the circulation excitant to the great convulsive center. Before this accumulation there is generally strain on the oxidizing organs or on the eliminative organs taking the line of least resistance.

Under normal circumstances the toxic elements produced in the organism are eliminated by various channels. Some of these products are transformed in the alimentary canal into innocuous susbtances. Gases are eliminated by the lungs, other compounds are intercepted and decomposed in the liver, and others eliminated by the kidneys and skin. When any of these emunctories is interfered with in the discharge of its duties, phenomena of autointoxication, such as headache, pallor, nosophobia, etc., occur.

The liver, which embryologically and functionally is two organs—one an eliminative and poison-destroying, the other a sanguifactive—by the peculiar intrinsic action due to the specific activity of its cellules, can diminish the toxicity of substances with which it is brought into contact. Such action is manifested, not only in the case of poisons introduced through various channels into the organism, but likewise in the case of toxic products elaborated within the organism itself in consequence of changes in products due to tissue activity.

In epileptics the liver, like the nervous system, suffers from the general instability. It has extra work to perform, but has not sufficient balance to do its ordinary work. Through this the toxic products of oxidizing organs are thrown back on them. The thymus disorders so relatively frequent in epileptics as in other defectives, and in many otherwise normal children, are due to the thymus thus becoming a point of least resistance. The kidneys are another point of least resistance, whose weakness is increased by an undue proportion of sodium chloride in the circulation. The adrenals imperfectly oxidize through aggravated insufficiency caused by dissociation of the adrenals from their overactive center in epileptics.

Even in the eliminative and oxidizing organs of epileptics this elastic-band instability is therefore present. Impoverishment of the brain-substance in oxygen has the effect of a chemic irritant which excites dyspneic respiration in the medulla and produces epileptic disorder of the convulsion centers. The buoyancy aura of epilepsy is due to an increased cerebral oxidation such as occurs in normal buoyancy or in mania, but which from the epileptic instability soon exhausts the brain supply, producing epileptic manifestations.

Epileptic instability is essentially the lack of balance of the degenerate or hereditary defective plus not rarely a higher ethical and intellectual background. The nerve-centers of the epileptic are, therefore, a powder magazine to which imperfect oxidation and elimination apply a torch. The type of the resultant explosion is determined by the nerve lines of least resistance.

Epilepsy and Its Treatment

With Special Reference to the Use of Verbena Hastata and Solanum Carolinense, Two Drugs But Little Known and Only Recently Employed for That Purpose

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A GOOD, terse definition of epilepsy is that given in the Standard Dictionary, which reads as follows: "Epilepsy is a chronic nervous disease, characterized in its more violent forms by paroxysms recurrent at uncertain intervals, attended by loss of consciousness and sensation, facial distortion, foaming at the mouth, convulsions of the limbs, and difficult, stertorous breathing. In the milder paroxysms there may be loss of consciousness without muscular spasms, or the spasms without unconsciousness."

The Etiology of Epilepsy

The chief predisposing causes are age, sex, and heredity. The age at which the first convulsion is most liable to occur is said to be from seven to seventeen years, but it may occur at any age from the cradle to the grave. The female sex is considered to be somewhat more liable than the male, but the difference is not great. Heredity is of more importance, and may be either direct or indirect; for while epilepsy seldom occurs in those who have no constitutional predisposition or hereditary tendency in this direction, it does not follow that the parents of epileptics were themselves epileptics, but rather that either they or their ancestors were sufferers from tuberculosis, alcoholism, syphilis, or some one of the neuroses, and that thus they have transmitted to their descendants constitutions more or less defective, especially in the direction of the nervous system.

The exciting causes are either structural or functional.

Structural causes are those which consist of definite anatomical lesions affecting the nervous system. These include wounds of the peripheral nerves, which produce "reflex epilepsy;" injuries of the skull, and resulting affections of the brain; and diseases and injuries of the brain and spinal cord.

The functional causes consist of conditions which are not appreciable anatomically, and which may affect the nervous system alone, or the organism as a whole. These include hereditary tendencies (so that heredity is both a predisposing and an exciting cause); drunkenness in the individual; sexual excesses; severe mental strain; long-continued depressing emotions; and disturbances of nutrition.

In addition to these two classes of causes, there remains a large number of cases for which no definite cause can be assigned and in which we are for the present compelled to assume a spontaneous development of the disease. These are known as idiopathic cases.

Varieties of the Disease

Considering the symptoms as a whole, epilepsy is divided into three general classes:

1. *Grand-mal*, or *major epilepsy*, in which there is complete loss of consciousness, attended by muscular convulsions.

2. *Petit-mal*, or *minor epilepsy*, in which there is transient loss of consciousness without convulsive seizures.

3. *Cortical*, or *Jacksonian, epilepsy*, in which there are localized convulsions, sometimes known as epileptiform attacks, occurring usually without loss of consciousness.

According to Henle's theory, as stated in Niemeyer's "Textbook," there are two forms, a plethoric and an anemic. He suggests that in the former, besides the intense hyperemia of the hemispheres which induces the palsy, there is a less degree of hyperemia, capable of inducing symptoms of mere irritation, arising in the medulla oblongata; while in the anemic form, he considers that the lack of blood in the cerebral vessels occasions an increased blood pressure in the medulla, inducing in it a degree of engorgement sufficient to cause signs of irritation.

In reference to the location of the exciting cause as related to the central nervous system, epilepsy may be classified as either central or peripheral, according as the mor-

bid cause originates within the brain or spinal cord, or outside the central nervous system, usually from causes affecting the peripheral extremities of the nerves.

Theory of Epilepsy

The general theory of epilepsy, which approves itself to me as best explaining the conditions as I have met them in actual practice, is that which assumes the existence at the base of the brain—either in the medulla or the pons—of a reflex- or convulsion-center, irritation of which will produce an epileptic convulsion. This can be produced in guinea-pigs by mechanical irritation of the reflex-center. It can be brought on in human beings by irritation from many different sources, one of the most common of these being the condition of toxemia resulting from autointoxication of different origins.

When once a convulsion has been induced, from whatever cause, it is more easily brought on again, by the same or any other irritation; and when it has occurred a number of times, a change takes place in the convulsion-center itself, by which it brings on the convulsion without any definite cause.

This is the epileptic condition or change which is at the bottom of every fully developed case of epilepsy. The attacks now occur at regular, or more likely at irregular and widely varying intervals, irrespective of any irritant cause. Epilepsy is now established, consisting of two factors, the status epilepticus, or epileptic condition, which is a persistent change in the central nervous system which is continuously present, and the epileptic convulsion or paroxysm, which occurs at intervals only. It is to be noted, however, that the term "status epilepticus" is used by some authors in a different sense than that here given.

Prognosis of Epilepsy

Epilepsy does not belong in the list of self-limited, or spontaneously curable, diseases. According to careful estimates, less than ten percent of all cases of epilepsy are curable, and only fifty percent of carefully selected cases were benefited by prolonged treatment. It is therefore evident that the question of treatment is a very important one, and that any method or plan of treatment which offers hope in selected cases is worthy of attention.

Indications for Treatment

1. *The first indication in all cases is to determine in so far as possible the morbid cause or source of irritation, and remove it when this can be done, or modify its action and lessen its activity when it cannot be removed entirely.*

Look out for all possible sources of irritation to the nervous system, either reflex or direct, such as an overloaded stomach, indigestion, constipation, intestinal autointoxication, alcoholism, intestinal parasites, teething in children, adherent prepuce, hooded clitoris, masturbation, sexual excitement and excesses, menstrual derangement, uterine or ovarian disease, mental excitement, depressing emotions, eye-strain, tumors pressing on the brain, depressed bone in the skull, injuries to any portion of the central nervous system or the peripheral extremities of the nerves, and any and all other sources of irritation which may suggest themselves in any individual case.

It is well to remember that the most common exciting causes of epilepsy and epileptiform convulsions are to be looked for in one of the three following directions:

a. Influences originating in the direction of the digestive organs. There are probably no more fruitful causes of convulsions than chronic constipation and an overloaded stomach.

b. Influences arising from the direction of the sexual system. This explains why the age of puberty is the most common period for the first appearance of epilepsy.

c. Influences coming from the direction of the mental functions. These include psychical influences of the most varied character, such as fright, grief, anger, painful excitement, joy, and unconscious imitation.

The search for causes should be made as thorough and complete as the nature of the case will admit, and may well include an examination of every organ and function of the body and the mind; for we shall find it to be true, as taught by Echiverria, that "epilepsy is not a morbid entity existing by itself, but a manifestation of manifold derangements disturbing the nervous system,

giving rise to definite inseparable conditions —the immediate cause of the convulsive paroxysm—that remains the same whatever the origin of the epilepsy. There is scarcely a disease affecting the human frame in which epileptiform convulsions might not happen as an incidental or essential phenomenon."

Remove Any Source of Irritation

Whenever and wherever the morbid cause can be located, or any source of irritation discovered which can conceivably act as a morbid cause or source of the convulsion, it should be removed where removal is possible, whether wholly or only in part.

Derangements of the digestive system should be removed or overcome, by the aid of dietetic precautions, hygienic rules, and medical or surgical treatment. Worms and teething in children call for appropriate remedies; and even in adults, the cause is sometimes found in some form of intestinal parasites. An adherent prepuce should be freed, and circumcision should be performed when necessary. Uterine and ovarian disease should receive proper local and general treatment. Brain tumors may sometimes be removed, depressed bone elevated, scar-tissues excised, and so on through the list. We have at our command all the resources of medical science, including the use of drugs, surgery, hygiene, dietetics, mental, moral, and physical therapy, and whatever else can be brought to bear upon the case.

Many difficult cases are greatly benefited by promoting active elimination, for the purpose of relieving the toxemia which usually accompanies and often greatly increases, even if it does not directly cause, the undue irritability of the reflex-center. The measures used for this purpose will vary with the nature of the case, the circumstances and surroundings of the patient, and the views of the physician; by which I mean that this condition of toxemia should be treated on general principles.

There should be a thorough cleaning out of the entire intestinal canal, and the rule should be, to "clean out, clean up, and keep clean." Calomel and podophyllin in small doses act well on the liver, while senna, cascara, and the laxative salines have their place. The amount of water, and more important by far, the amount of solid matter passed by the kidneys, are of the utmost importance. The free drinking of water is almost always beneficial. There is here a large field for hydrotherapy, which serves many valuable ends besides elimination.

In many cases, however, we shall find that our patients will not cooperate with us to the extent of giving us an opportunity to carry out the necessary investigations, or apply the indicated remedy; and, again, after all has been done that the ingenuity of man can suggest, we shall often be obliged to confess that we are unable to determine the essential morbid cause, or if determined, to remove it. These cases we shall be obliged to class, practically if not theoretically, as idiopathic, and content ourselves with symptomatic instead of causal treatment.

Correct Habits Are Imperative

2. *The second indication is to teach the patient right habits of living, both as to diet and general hygiene.*

In order to accomplish this result, it is again necessary to secure the full cooperation of the patient. If this cannot be done, all the remedies which can be administered will only spell failure; for I regard it as a truism that no course of medical treatment can be adopted which is sufficient, alone and unaided, to effect a cure in an advanced case of epilepsy. Indeed, this malady is of so serious a nature, and the proportion of cures under any plan of treatment is so small, that it is necessary to bring to one's aid any and every conceivable means which can add to the chances of success.

I do not believe in the special efficacy of any particular fad or system of diet. The food must be plain, simple, and nonstimulating. It should be thoroughly masticated, taken at proper intervals, never in too large quantity at once, and never when the system is not in proper condition to assimilate it. That is to say, the ordinary rules of hygiene relating to diet should be scrupulously observed. Beyond this, any and every article of food which experience has shown to disagree with this particular patient should be carefully avoided. Every individual has a stomach of his own which varies from that of

everyone else in some respects; and what will agree with one person may disagree with another, seemingly under identical circumstances.

Meat should be allowed only in a very limited quantity, but I do not believe it is advisable to prohibit it entirely. The object in arranging a system of diet in cases like these should be to provide one which can be kept up indefinitely without disgusting the patient, and thereby causing him to rebel against it. Hence it should not be extreme in any respect. Fruits and vegetables are admissible in so far as they agree with the stomach. The bowels should be kept loose by a laxative diet in preference to the habitual use of drugs. Elimination by the kidneys should be promoted by the use of fruit juices, lemonade, oranges, and the free drinking of water

The Saltless Diet

The saltless diet is now very generally recommended, and seems in many instances to be followed by good results. This method is sometimes known as the dechlorization or salt-starvation method, and was devised by Toulouse and Richet. It consists in the total withdrawal of salt from the diet, and the substitution therefor of sodium bromide.

The theory is that by substituting the bromide of sodium for the chloride of sodium, the blood takes up bromine instead of chlorine, and thus the nerves and nerve-centers are kept constantly bathed in bromine, which is considered the most powerful antiepileptic known. Another theory is that any decided amount of chloride of sodium in the blood acts as an irritant to the cerebrum, and increases the frequency and severity of the attacks. (William Lessem.) But Courmont and Cremien found that, while the convulsive tendency was held in check by the saltless diet combined with bromide of sodium, the cessation of the attacks was accompanied by a grave nervous condition, characterized by delirium and suicidal impulse, which passed away with the addition of salt to the diet.

It is evident that not only is the rationale of the saltless diet not yet understood, but even the fact of its beneficial effects is not definitely settled. My own observation has convinced me that in some cases even the small quantity of bromide which is taken as a substitute for salt in the diet is injurious, having a distinctly unpleasant effect, which passed away when all bromide was omitted

My present practice is a compromise between a strictly saltless diet and one containing the usual amount of salt. I direct that no salt be used with the food *as an additional condiment*, but do not require that the food be cooked strictly without salt. This plan works satisfactorily with the patients, and saves much trouble for the family, as well as the probability of a rebellion on the part of the patient, inasmuch as there are but few persons who will long continue a strictly saltless diet. Nor do I believe it to be necessary.

Adjustment of Exercise

Moderate exercise, both of body and mind, is beneficial; but severe and exhausting labor, either physical or mental, should be strictly prohibited if you would cure your patient or even control the disease. In my cases, the most common causes of recurrent attacks after a considerable period of freedom from them have been hard study, mental excitement, worry, and anxiety.

One patient, a bright girl in the high school, gave up school at my direction, but soon improved so much that I very unwisely consented to her return; whereupon she immediately set out to get to the head of her class, but soon suffered a relapse as the result.

Another, a woman of sixty, who had been a sufferer from the disease for forty years, had improved greatly, having been free from convulsions for more than two years, when she took courage from her long immunity and again entered the field of social life and church work. She met with a committee of ladies to prepare garments for the poor and make arrangements for the Christmas holidays; finally taking charge of the work herself. A series of convulsions was the direct result.

Both these cases belonged to the successful series, of which one characteristic is, that while under treatment convulsions seldom occur except as the result of some definite

exciting cause. When this is the case, there is every encouragement to continue the treatment with the certainty of benefiting and the hope of curing the patient. But when the paroxysms occur without any reference to the local conditions, then the outlook is much less hopeful.

Relax the "Spasm"

3. *The third indication, in all cases having a distinct aura, is to provide some quickly acting means of relaxing the vasomotor spasm, overcoming the muscular contraction, and preventing the occurrence of the convulsion, the same to be used at the earliest approach of the aura.*

The means most frequently resorted to for this purpose is the inhalation of the nitrite of amyl, preferably from broken perles, which latter may be carried in the pocket, and broken at the first indication of the oncoming of the epileptic paroxysm.

Only slightly less quick in its action, and more easily handled, is a granule of glonoin, which may be quickly dissolved in the mouth, and is as quickly absorbed, producing its characteristic relaxing effect, which is manifested by the flushing of the face and the quickening of the heart's action. The dose usually employed for this purpose is 1-100 of a grain. The effect of the nitroglycerin quickly passes away, but its action, or a similar one, may be prolonged by the simultaneous use of atropine or hyoscyamine. As shown by Nothnagel, however, "this remedy should only be tried where the patient becomes pale at the beginning, where indications of cerebral vascular spasm are present. It should not be administered if the color of the face is cyanotic from the outset." Furthermore, only a small proportion of cases present any distinct aura.

Lessen Central Irritability

4. *The fourth indication, in all cases where the symptoms are well marked and the epileptic condition is fully established, is to institute medical treatment for the purpose of lessening the irritability of the convulsion center.*

For this purpose a multitude of drugs have been and are still in use. The one remedy that has been recommended in every textbook on the practice of medicine which has been published since the introduction of the drug into medical practice is the bromide of potassium or some form of the bromides. So nearly universal is its use at the present time that it is safe to calculate, when you are called to see an epileptic who has been previously treated, that he has taken some form of the bromides. Large doses are frequently administered for the purpose of controlling or modifying the convulsions, and this often ineffectually; while the secondary results are mental dulness, hebetude, and even stupor, with other results equally injurious; in some cases the paroxysms even being increased in severity and the general condition made worse.

A bromide is not a satisfactory remedy to use, at the best, and I have long been seeking for a better. I shall therefore consider mainly certain remedies which I have myself used with good results in the treatment of this disease.

Remember, in the first place, that epilepsy is generally regarded as an incurable disease; that improvement is in most instances the most that can be expected in long-standing cases; and that, if a substantial improvement can be secured, the patient should be content to continue the treatment indefinitely. Also remember that whenever any drug is to be taken for a long time, its incidental or by-effects become of great importance.

I shall speak mainly of verbena hastata and solanum carolinense as the dominant remedies, with scutellaria laterifolia and cypripedium pubescens as variants.

With these four remedies I believe much can be done in the line of lessening the irritability of the convulsion center.

Verbena Hastata and Indications for It

The most noticeable general action of verbena is its tonic effect on the nervous system, brightening up the patient's mental faculties and giving him a more cheerful aspect. This is in marked contrast to the action of the bromides, which produce dulness and hebetude. Its antispasmodic effect is probably secondary to its tonic action.

The cases and conditions in which it is specially indicated in epilepsy are the following:

1. Those cases in which the action of the bromides is distinctly unfavorable. It is probable that these are the anemic cases of Henle, in which the bromides are theoretically contraindicated. These cases are those which I have found most likely to be benefited by verbena.

2. Those recent cases in which the status epilepticus is not fully established, and also the comparatively mild ones, in which the convulsions are not extremely frequent or severe, nor the mental faculties greatly impaired. These are the cases which might naturally be looked upon as curable, and in these the results of verbena are likely to be favorable.

3. Cases of menstrual epilepsy, so called, in which the convulsive attacks are connected with the function of menstruation, either in its establishment or its periodical occurrence. In these cases verbena is considered to be especially useful.

4. Those cases which are variously described as visceral or peripheral, in which the convulsions are dependent upon some cause outside of the central nervous system. If this cause can be removed, verbena is effective.

5. Cases of petit-mal. My own experience does not confirm this indication, but it is so small in this regard as to be of little importance.

As to the method of using verbena in these cases, all my experience has been with the concentration, verbenin. This is furnished in tablets of 1-3 grain, each one of which is said to represent about 15 grains of the herb of verbena hastata.

So far as I have been able to ascertain, this is by far the best preparation obtainable. It does not possess the objectionable taste of the fluid extract, but is taken readily and continuously without objection. One of my patients has taken it regularly—with only a few months' interval—for nearly eight years, and will probably continue its use during her life It never disturbs the stomach or produces any unpleasant symptoms in any doses which I have used—and I should not hesitate to give even larger ones if necessary to produce the desired effect.

With an adult, I usually begin with one tablet before each meal and, if the spasms are apt to occur at night, also at bedtime. From this initial dose, I increase one tablet *each day*—not one each dose—until one of three things happens: Either, (1) the convulsions are controlled, at least measurably; or (2) signs of some unpleasant effect of the drug are manifest—a thing which in all my use of verbenin I have never noticed; or (3) it becomes evident that the remedy does not meet the indications, and the patient grows worse instead of better.

In the first instance, having found the dose which controls the convulsions, continue that dose, and if thereafter the convulsions recur, increase the dose as the severity of the symptoms may require. My usual maximum dose has been 6 tablets, or 2 grains, at each dose, and this may be given three or four times a day, as occasion requires; but I should have no hesitation in increasing that dose gradually and indefinitely until the convulsions were controlled or danger signals appeared.

In the second instance, the only thing would be to lessen the dose or discontinue it entirely; but verbena is not a poisonous drug, and very seldom will there be unpleasant symptoms from its use.

In the third instance, when it becomes evident that the patient is not helped or is made worse by the drug (and there are a few such cases), the only thing is to stop at once; and if you can hold the patient to try another remedy, by all means do so. The alternatives are usually bromides or solanine.

Solanum Carolinese and Indications for It

The essential therapeutic action of solanum carolinense is that of a powerful antispasmodic and nerve sedative, and it is of value chiefly in the various convulsive disorders, such as chorea, eclampsia, infantile and hysterical convulsions, and epilepsy.

It is a remedy of much greater power than verbena, and is adapted to a very different, and indeed almost an opposite class of cases. The following are its principal indications:

1. The plethoric cases of Henle, where the bromides have a beneficial effect, although they also produce some unpleasant incidental effects. Here solanum carolinense is almost always superior to the bromides, while lacking their minor disadvantages.

2. Cases of grand-mal of the idiopathic type, without hereditary taint, and where the disease has begun since the age of childhood. Here it is probably better than any other known remedy. (Thrush.)

3. It is perhaps of the next greatest value in hysteroepilepsy with marked convulsive seizures. (Thrush.)

4. In cases of well-advanced epilepsy of any type in which there is degeneration of the cerebral neuron, this drug will act specifically for a time, even better than the bromides; but it will finally be determined that the bromide salts will ultimately control the attacks better in these cases. (Thrush.)

5. In cases of cortical, or Jacksonian, epilespy, a somewhat limited experience indicates that solanum carolinense is a remedy of great value.

With reference to the preparations and and dosage: My own experience has been with two preparations only—the specific medicine of the eclectics and the alkaloidal granules.

Of the first of these, I am in the habit of beginning with, say, 5 drops three times a day, or if the attacks are most apt to occur at night, four times a day; the last being at bedtime, the others before meals, the medicine to be taken in a little water. This is to be increased gradually until the convulsions are controlled or the symptoms of drug sufficiency or physiologic action are observed. In my experience, the first of these results is usually secured from a dose of from 15 to 30 drops three or four times a day. In one case the attacks became worse instead of better, and this was accepted as a positive indication for discontinuing the drug.

Thrush maintains that in order to secure satisfactory results from this drug, it must be given in doses sufficient to affect the cortical centers, which is evidenced by a condition of drowsiness and stupor; and that this dosage must be continued through a period of several months—a year not being too short a time to elapse before its discontinuance.

It will be seen that, as compared with verbena, solanum is adapted to the severe cases, the long-continued ones, and those in which the mental faculties have deteriorated. These are the cases difficult of cure, and even of amelioration. If reasonable improvement results, the remedy should be continued, the dosage being changed according to the effect produced.

If the alkaloid is used, the general effects are the same, as are the principles of dosage. It is difficult to formulate any rule as to the number of drops which corresponds to the alkaloidal granule of 1-67 grain. My observation would lead me to put it at about 5 drops; but other estimates vary widely. Anyway, if we follow the rule of dose for effect, no harm can be done, and the proper dose in any particular case will easily be determined.

Scutellarin and Cypripedin are mild but efficient nervines, something of the nature of valerian, but much pleasanter to take and without any disagreeable incidental effect. They are not powerful enough to be used by themselves as remedies in this disease, but are useful in cases characterized by general nervousness, as adjuncts to the more powerful remedies. Either one is given in doses of three to twelve granules—the larger dose to be taken once only, the smaller four times a day if necessary.

Persist in Treatment

5. *The fifth indication, in all advanced and severe cases in which favorable results are secured but a perfect cure is not obtained, is to continue proper medical treatment during life.*

One thing do not forget. Never consider a patient cured until he has been at least two years without any symptom of epilepsy. And if it is a case of long standing, even this does not mean a cure. It is a great deal easier to prevent convulsions for two years than for three—or four.

The fact is, a confirmed epileptic is never cured—if by cure you mean putting back where he was before the disease began. He will always be more or less susceptible to irritation of the reflex-center, and may, on the appearance of a sufficient cause (as overeating, unusual exertion, sexual excess, or any one of a thousand causes) suffer from a recurrence.

Hence it is wise, in all advanced and confirmed cases, to continue medical treatment

during life—always provided that sufficient relief is secured therefrom. My first patient thus treated had suffered from the disease for forty years when I undertook her case. She has been two and a half years at one time and three at another, with no recurrence; but she is not cured, and never will be. Nevertheless, she is so greatly benefited by the treatment that she is content to take verbenin tablets to the end of her life. And that is the best that can be done for her.

Not all patients are willing to do as this old lady, however. They want to be cured, and be done with it; if this cannot be done, they refuse to go on with the treatment. With such patients, nothing can be done. But the patient who is willing to put himself in the care of his physician, and stay there, should have the benefit of the best that that physician can do for him, including medical treatment and constant oversight and watchful care.

Mistakes

II. The Case of "Neuralgia"

By CURRAN POPE, M. D., Louisville, Kentucky
Formerly Professor of Physiotherapy, University of Louisville;
Medical Superintendent, The Pope Sanitarium

EDITORIAL NOTE.—This paper will be followed by others on the same general topic, all exceedingly practical and helpful, and written in the entertaining style of which Dr. Pope is a master. The physician who reads these papers carefully will avoid some of the common pitfalls in diagnosis, and will be able to treat many a case with better success.

IN dealing with some of the more or less concrete examples of easily preventable mistakes that have come under my personal knowledge in recent years, it must be understood that the object of this series of papers is, not to criticize my medical brethren, but simply to call attention to the fact that, had a careful investigation been made by those methods of diagnosis that are easily accessible, the mistake would not have been made. No cases have been selected that involve nice distinctions; on the contrary, *simple* (?) cases have been chosen, that is to say, cases that would have been *very clear* had any real effort been made to search for the conditions present.

An "Old Rheumatic Trouble"

The following experience may prove of interest:

A woman, aged 38, married, mother of three healthy children, called to see me, giving the following history: Has been fairly healthy all her life; had the usual (?) exanthemata and children's diseases; at the age of 12, she had a severe attack of acute articular rheumatism with fever, swollen joints, etc., being confined to bed for six weeks and making a slow and tedious convalescence. Was sent away to a girls' school at the age of 15, and during her second college year, at 16, she had another severe rheumatic attack lasting several months. Was brought home on a "stretcher." Gradually regained her health, and ever since has been careful of self in order to avoid rheumatism.

Her family is markedly rheumatic. Her father has gout, her mother "chronic rheumatism," and her two brothers have both had genuine acute inflammatory rheumatism, followed, in one instance, by endocarditis, and in the other, by chorea, for which latter malady I treated him. A sister so far has escaped.

The patient in question has a good appetite, good digestion, but is constipated; this she regulates with laxatives. She is sturdy-looking, of good flesh, and usually very active. Her present illness commenced, about two weeks ago, with an attack of her "old rheumatic trouble." It came on

gradually as an aching on the left side, as she said, "in the lower ribs." After several days the pain suddenly became intense. She drove down to her family physician's office, who heard her story, examined her tongue, felt the pulse, and stated that it was her "old trouble," in which diagnosis she agreed. He prescribed a salicylate, and dismissed her with the instruction to keep quiet and apply heat to the painful spot. Several days later he again saw her, this time at her residence, and he changed his diagnosis to "intercostal neuralgia," and prescribed anew. Growing worse, she concluded she would see a "specialist." In this way I came into contact with the case.

It may here be noted that no physical examination was made during the entire course of treatment.

After learning the foregoing facts, besides many others it is needless to mention, being foreign to the purpose of this paper, I proceeded to make a careful and complete physical examination.

Herpes Zoster with Acidemia

The first thing discovered was a beautiful (?) nay, typical eruption of herpes zoster, together with the other clinical symptoms that made a diagnosis of neuritis unequivocal. In addition, well-marked endocarditis was present. The urine was hyperacid (90 Harrower); specific gravity 1024; loaded with oxalate and uric-acid crystals; and a trace of albumen. The presence of a few cylindroids, renal epithelium and an occasional hyaline cast presented a suggestive picture.

The woman was placed upon treatment both general and local. Free purgation with a mercurial (blue mass) followed by a laxative saline, and each morning by subsequent doses, proved very helpful. To combat the hyperacidity and relieve the kidney irritation, as well as influence metabolism generally, she was placed upon full doses of sodoxylin, with free drinking of water. At the same time the galvanic and high-frequency currents were applied locally to the inflamed nerves. During the interim between these treatments a stiff salve of zinc oxide was applied. In a very short time relief was given, followed by a subsidence of the eruption. As soon as possible she was given hydrotherapy, incandescent electric-light baths, horizontal rain, circular or needle-baths, douches, etc., and, in addition, massage and general electrical treatment, including those mentioned above, and the wave-current to the spine. She left the sanatorium in excellent health

"Nervousness and Neuralgia"

Here is another convincing illustration:

School teacher, aged 30, single, overworked. Has been compelled, through financial troubles, not alone to perform her heavy work in the public schools, but has supplemented her income by private teaching in the afternoons and evenings. She was able to "hold up" until she had cleared her financial skirts of the embarrassment that entangled her; then, however, she began to feel the strain.

She became nervous, restless and irritable, had sleepless nights, varied by occasional terrific nightmares. She was gradually and steadily growing weaker and unable to perform her work. She first gave up her night teaching, then her afternoon teaching, and, on her own initiative, began to take long walks, but these fatigued her more and seemed to make her more irritable and nervous. She began to feel "pains around her heart" that really frightened her. She fought going to a doctor because "she had saved up enough over and above the debts she had paid to give her a vacation trip to Europe," and she did not wish to "divide with doctors." This was her undoing.

Her family physician saw her, and after listening to her tale of woe, he listened to her heart (through a thick dress, underwear, corsets, and all accoutrement). He thereupon pronounced her heart normal, saying that the pains were "purely nervous; that her heart was as sound as a nut; that the pain was neuralgic" (?). This was true in so far as it related to her heart, for it was *good*, both organically and culturally. Medication along "purely nervous and neuralgic" lines failing, the lady, after two months' trial, was brought to me, by a former patient, for examination and treatment.

After eliciting the facts recounted, it turned out that all of her family were of

a psychopathic nervous type; that she had always been nervous and high-strung; had had chorea as a child; nearly always suffered from digestive disturbances of nervous origin.

It is needless to go into the details of the many symptoms discovered; of the relief of her nervous symptoms, of the correction of her psychic life and nightmares by the psychoanalytic method of Freud, as these do not bear on the case in point, to wit, the failure to realize the true state of physically plain conditions through overlooking the necessity to examine patients physically in the proper manner.

Another Case of Neuritis

Here, as in the other case, we had to deal with a neuritis. There had been an eruption of "shingles" during the acute stage of the disease, some few vesicles remained as well as many pigmented spots that had formerly been vesicles.

The proper local and general measures adopted in the first case described soon relieved the "pain in the heart," while general physical and psychoanalytic treatment removed the general psychopathic condition. Several years have elapsed, but the patient remains well, better in body, better in mind, and able to do as much, if not more, mental work as in her palmiest days, The incubus, from which she had suffered for years, is simply a phantasm of the past, as it was dependent on the factors detailed by Freud and removed permanently by the re-education that resulted from the treatment.

Fads and Follies of Twentieth-Century Medical Practice*

By EDWARD H. EGBERT, M. D., Washington, D. C.

WE consider that by the term "medical practice" is meant the use of any method of treatment, or the giving of any advice, for the purpose of preventing, alleviating or curing any symptom or disease, by any person or persons who either directly or indirectly use such efforts as a means of financial gain.

Were legislative enactment made on the basis of such a definition the present state of affairs would not exist, but because of the ignorance of our legislators, and because of the efforts made on the part of patent-medicine interests and fake practitioners, the scientific physician, who has spent at least eight years of the best part of his life in seeking to meet the educational requirements enacted by law, is harassed at every turn in his efforts to give the public the advantage of his laboriously acquired fund of knowledge. On the other hand, the faker and the faddist are unhampered by legal restrictions.

I believe the time has come when we can no longer ignore the indignities with which we are assailed, and that a painstaking investigation of this social and professional problem must be made in order to come to a realization of the exact status of affairs.

Having once arrived at a decision as to the etiology, preventive measures may be taken, and with the diagnosis cleared up, active treatment *must* be instituted. I say "must," for I wish to emphasize the necessity for a prompt and active campaign against the influences which are thoroughly destroying the confidence of a large percentage of the public in scientific medical attainment.

Contrary to literary custom, but complying with clinical practice, we will consider first the diagnosis and then the etiology.

What is the matter with the doctors, and what is the matter with the public?

First of all ourselves. Time does not permit more than a mere word or two upon the several phases of the poor policy on the part of the profession at large which contribute to the ill repute with which we are

*Read before the Medical and Surgical Society, District of Columbia, January 23, 1911.

being assailed, but mention of some of them will provide food for thought and discussion.

Crowding the Ranks

First, as to overcrowding. There can be no doubt but that the profession is crowded and that the supply is considerably in excess of the demand. As a result, many are driven to unethical deeds merely through the law of self-preservation. The average income of a physician in this country is less than one thousand dollars a year; some estimate it as low as eight hundred. A physician, if he has any hope of bettering his practice, must live at at least double this income. He naturally feels that after an extensive preparatory course he is entitled to at least as good a living as a skilled mechanic, consequently he is very apt to become deeply indebted.

Opportunity is afforded, say, to perform a difficult operation. He knows of men better qualified for such work within reach and who are earning from fifty to one hundred dollars to his one, but he does not call them. He needs the money, and he does the operation, with the chances that discredit is heaped upon, not only the offender, but upon the profession at large, because of this man's failure.

A certain druggist offers a percentage on his prescriptions. It is easy money and he needs it badly, but this and a score of other means brings into disrepute, not only the offender, but also those physicians who are above grafting.

Overcrowding is especially the case here in the District of Columbia, with one registered physician to every 270 of the inhabitants, one-third of whom are colored, and no small percentage of whom are receiving free treatment at one of the seventeen dispensaries or are attended by a man engaged in contract or lodge practice.

However, with the larger average of one doctor to every 480 inhabitants throughout the country the conditions are not as bad as they would seem at first sight when compared with the statistics of some of the European countries, where the ratio is about one to 1500 people. We have not so many distressingly poor as are found among the great peasant class of Europe, and the average American citizens can better afford professional advice, hence will consult the doctor more frequently than will the average European.

Too Many Colleges and Irrational Curricula Are to Blame

It is my opinion, however, that the curse of the profession is not so much quantity as it is quality. There are too many medical schools, and in the effort of some of them to survive financial strain, men have been and are still being recruited for matriculation and finally graduated who make undesirable physicians, and are a blot on the record of their Alma Mater.

Whom have we to blame for this condition of affairs? Who have flooded the market, and added incompetents to our ranks? Doctors of Medicine!

Recent agitation has done much to relieve us of the malignant diploma mills, and the merging of two schools into one is a more frequent occurrence now than the founding of a new college; but the best men graduated from the best schools are none too well equipped to combat disease and quackery.

Too much time, for the four-years' course, is spent in studying nonessentials, and too little is given to practical diagnostic and therapeutic methods. Oh, the hours we spent fooling around a laboratory, drawing pictures of an embryo chick, dissecting of an odorous fish, making tracings of a frog's heart beats on a revolving drum, ascertaining whether a certain solution contains zinc, lead or some other metal, or sitting on a hard straight-backed seat in the surgical amphitheater enjoying nothing more interesting or profitable than a bird's-eye view of a surgeon and his assistants! Would not the young doctor, who is called, frequently in an emergency, to treat desperately sick babies, cases of poisoning, hemorrhage, dislocation, fracture, accidental wounds, and burns, or to advise hypochondriacs, neurotics, neurasthenics, and other chronics who are anxious to "try the new doctor," be better prepared to serve his fellow man, and reflect honor upon his profession, if more time had been spent in preparing him to meet emergencies and to treat chronic diseases?

There is time enough in the four-years' course to give every student a good working knowledge of dietetics, psychotherapy, hydrotherapy, massage, thermotherapy, and a more complete mastery of medicinal therapy and physical diagnosis than has been the custom. Would it not be well, also, to give a few lectures on medical ethics and medical economics, to teach him how to uphold the dignity of his calling, and how to fight ignorance, superstition and quackery?

I do not favor an exclusion of the independent medical college, although it is a fact that the unendowed schools have been the greatest offenders in graduating men unsuitable from a standpoint of personality and preliminary education. I believe that the better class of them should merge and continue their efforts, for their teaching, in the main, is of an intensely practical nature, and many of our best clinicians are the output of these schools.

The tendency of the heavily endowed schools is to become ultra scientific, preparing men for special work, research work and the field of medical instruction rather than for general bedside practice. With both classes of schools side by side, we shall have a better-balanced profession. The public needs the practical clinician; the profession needs scientific research workers

The Fee-Splitting Controversy

Much has been said about the commercializing of the profession, and in this respect I will take time to speak of nothing but the fee-splitting question.

I wish to go on record as being unalterably opposed to such a proposition, for if there is anything which will tend to commercialize the profession and be the source of ill feeling and quarrels among its members, belittling us in the estimation of the laity, it would be the practice of splitting fees. The tendency would be for the least accomplished to offer the largest percentage of rake-off, the better man to give less, and the best to give nothing, because their time is all consumed with cases which would come to them in spite of being urged by their physicians to seek someone else. Is surgeon A going to split his fee and feel a friendly attitude toward his brother physician Dr. B when the patient tells him that he has more confidence in his, A's, ability, in spite of the fact that Dr. B said that he was highly overestimated, and that Dr. C was really a better surgeon?

It amounts to this: If specialists can afford to split fees, and general practitioners can afford to accept a percentage, then the specialist feels that he can afford to operate for less, while the general practitioner feels that he is not sufficiently remunerated. If the patient can afford to pay $200 for an operation, and the surgeon feels that he can afford to give the physician 25 percent of that amount, then let us revise our fee-table.

I have long felt that the general practitioners would do well to follow the specialists' tactics and charge according to the service rendered and the skill manifested. Charge less for routine work and more for work involving greater skill and greater responsibility.

Take for instance a case of extrauterine pregnancy. Which would be better, for the surgeon to operate for $200 and then slip the family physician $50, or for him to say: "My fee for the operation is $150, but had not your family physician showed excellent skill and judgment in making a diagnosis and advising surgery, instead of fooling along with useless and dangerous palliative measures, you probably would have met with fatal hemorrhage. Appreciation for such valuable service can be shown by paying your doctor $50, instead of the usual fee for the visit"? I do not mean by this that surgeons should act as a collecting agency for their physician friends, but they can do much toward gaining the confidence of the public in the ability of the general practitioner, be helping them to appreciate skill, when it is shown, than by underhandedly "divying up" with the physician.

Fraternal Ethics Furnishes the Answer

What is the solution of this problem? It is simply a question of fraternal ethics. The man who signs the diploma for ignoramuses, for an unscholarly or ungentlemanly medical student, is a traitor to his profession. It is responsibility enough to assume charge of a sick individual. How much greater, then, is not the responsibility

incurred in sanctioning a degree of Doctor of Medicine for a man who will eventually treat thousands, unobserved by the eyes of the faculty?

The physician who encourages an ill-fit man to take up the study of medicine is an accessory to the crime. The man who uses unfair means to build his practice, such as surreptitious newspaper advertising, verbally "hot-airing" his patients and acquaintances, knifing his brother physicians, is infinitely lower than a straight-forward advertising quack. They are not only quacks themselves, but are encouraging quackery and commercialism, and should be severely disciplined by the honest members of the professional body. I make a plea for a closer adherance to ethics, in its broadest sense.

And Now the Public

Now, then, what is the matter with the public? Broadly speaking, inadequate education in matters concerning health and in subjects which tend to stimulate powers of logical reasoning.

With the better knowledge concerning hygiene, physiology, and pathology, and with better powers of logical reasoning, they would not so easily be victimized by the quack faker and faddist. They would not be led away in hysterical flights of optimism that denies the existence of disease, matter, and evil; they could not be led to believe that all diseases are caused merely by mental attitude and that every form of sickness is expelled through the power of suggestion, albeit they may call it by some other name.

The One-Idea Faker

The man who claims that "all diseases are due to definite lesions consisting of bony displacements," and that "treatment and cure must necessarily consist in and follow the removal of the cause," is likewise a faker. And so we might enumerate all the "ists, isms, and pathys" naming but one cause and one treatment for all disease. True, many of these are themselves victims of illogic, and are sincere and enthusiastic in their belief, but they are fakers nevertheless. Anyone who says that all diseases can be cured by medicine, or by massage, or manipulation, or fresh air, or going barefoot, or what-not, or denying existence of pains, is wittingly or unwittingly a faker.

Osteopathy and Mechanotherapy

Some say that, for instance, osteopaths do not claim to combat all diseases. Listen: "It [osteopathy] must have proper legal regulation; its practitioners must be able to handle all diseases, and the public must be educated to acknowledge that it is a complete system."(Dufur, "A Broader Education for Osteopathic Physicians," I. A. O. A., Oct. 1910.)

"Osteopathy is a *system of healing, not alone a method of treatment;* it is a *system or school* because it has a *distinctive* and *embracing etiology, diagnosis,* and *therapy.*" (McConnell, "The Osteopathic Concept." I. A. O. A. Vol X, No. 4.)

"What is osteopathy? The question is still asked by many, despite the fact that legions of people everywhere now depend entirely upon its ministrations in sickness; despite the fact that legislators in nearly all the states have specially legalized it; and despite the fact that approximately 4000 trained physicians are today practising the new healing system." ("The Right Way," Dec. 1909. Vol. XI, No. 4.)

"Osteopathy became a school of practice in 1892. It was discovered twenty years previous by Dr. A. T. Still. The first class graduated in 1894. At present there are eight colleges, over 1,500 students, and more than 5,000 practitioners." (Teall, "The Institutions and Organizations of the Profession. I. A. O. A. Vol. X, No. 4.)

What is mechanotherapy? Here is some of the information I received from the American College of Mechanotherapy:

"For $25.00 cash, or $27.00 in nine installments, you will receive the charts, books, special instruction, and a *beautiful diploma* giving you the degree of "Doctor of Mechanotherapy." "We have over 2,000 graduates." Are these "graduates" in any way successful in exploiting the sick? Scores of them testify somewhat as follows (From personal communication):

"I am making $10 to $15 a day and work seven days a week. I am busy all the time and am sending patients to Dr. W. R. Skellenger, M. T., and the sanitarium, so

you see what a lot I have to do. May God bless our work in the healing of the sick is my prayer. Yours in the Master's work, Dr. W. F. Leslie, M. T."

"The Mechanotherapy student has, at the end of each treatment, $2.00 cash in hand, and all profit."

"It is just as easy for an M. T. D. to get $5.00 as it is for an M. D. to get $2.50 for a treatment." P. W. Dyment, M. D.

"I am doing a good business and getting a good practice in mechanotherapy, which goes good in my profession of optometry." Sam Levy, O. D., M. T. D.

"The man who induced me to take a course in mechanotherapy was formerly a blacksmith with an ordinary education; today he is practising mechanotherapy with an average income of $15.00 a day." M. S. McClure, M. T. D.

"I now get patients from four different states, and make as high as $25 to $30 a day. I feel that in mechanotherapy there is financial success for all." E. L. Stout, M. T. D.

But what is mechanotherapy?

"The mechanotherapist is a drugless physician and bloodless surgeon. His medicines are not drugs, but scientific combinations of food, circumstance, idea, water and motion." From advertisement in *The Progress Magazine*.

"It will be seen at a glance how fallacious it would be to take a two-years' resident course when you can learn more from these volumes in two months than a lot of long-winded so-called professors can teach you in a year." (Personal communication.)

Did time permit I could inflict you with such testimonials for the rest of the night, showing you the utter folly of half a dozen other socalled "systems of practice."

"New-Thought" in Foot Ball!

I can't resist the temptation to quote a few lines taken at random from various periodicals in my possession. On page 15 of *The Nautilus* for January, 1911, is described the effect of new-thought in playing the game of football.

"A few days after, Harvard played Yale at the Yale grounds. Haughton (coach) instructed Harvard to send 'three long confidence thoughts, and three times three success vibrations to the players.'"

Bernarr McFadden gives the following excellent (!) advice for the treatment of diphtheria: "Do not encourage the child to stay in bed, and as for draughts, the patient should actually sleep in a draught as far as possible. Further, drugs are not of the slightest use, and antitoxin is dangerous and is not in any case necessary. Diphtheria is not a dangerous disease unless it is made so by the method of treatment that is employed. As a rule the severe symptoms of the complaint will disappear in a few days if you treat it in accordance with commonsense methods." (*Physical Culture.*)

This is enough to give you some idea of the brilliant advice that is being greedily read, and I regret to say, is mightily influencing the American public.

Do you know, gentlemen, that there are published in this country over eighty periodicals, to say nothing of the countless books, whose absolute purpose, or incidental result, is to run adverse to everything sound concerning scientific matters, concerning health, and that the writers of such pernicious teachings are more and more frequently breaking into journals of the better class?

For instance: "America's Medical Hell," *Current Literature*, January 1911; and the literature propagated by the League for Medical Freedom.

The League for Medical Freedom

What is this "League for Medical Freedom?" Surely, "politics makes strange bedfellows," for in this league, working in pleasant harmony, we find the Christian scientists and new-thoughtists who believe in no evil, and osteopaths and backbone fakers who would have us think that all diseases result from maladjustments of bony and cartilaginous structures, homeopathists with their "like cures like," and the patent-medicine industry who believe in unmercifully drugging everybody for everything!

This league is 150,000 strong, with a fortune at its disposal. It is headed by B. O. Fowler, editor of *The Arena*, and a well-known literary light. An idea of this man's knowledge of scientific medicine

which he so severely criticises, may be gained by reading his series of articles appearing in *The Arena* from March until June, 1909, entitled, "Medical Explanation of Christian-Science Cures, Considered in the Light of Typical Cases." The trump case he cites, choosing it "because of the supposed incurable character of the disease, and the fact that from the viewpoint of materia medica (sic!) the question of diagnosis leaves nothing to be desired, is a case of blastomycosis." Schamberg, Hyde, Montgomery, Gilchrist, and other eminent dermatologists emphatically state that blastomycosis renders a good prognosis and shows remarkable tendency to spontaneous cure.

This "League for Medical Freedom" was established for the sole purpose of defeating the Mann Bill now before the United States Congress. In the prospectus of this league, the learned Mr. Fowler states that "the A. M. A. has long been aggressively favoring legislation and restrictive laws that would deny the individual citizens the practitioner of his choice, if that practitioner did not conform to the creeds, dogmas, and regulations of those seeking protection." The logic and clearness of this statement is in exact keeping with the reasoning powers of gentlemen of this ilk.

What Have These Special-Dogmatists Done for Medical Science?

What are the creeds, dogmas, and regulations of those seeking protection? Does this mean that those seeking medical advice have creeds, dogmas and regulations, or that the American Medical Association, representing the body of regular physicians, are afflicted with such impedimenta? If I am not mistaken, the regular physician is the only one whose judgment is not limited by any creed, dogma or regulation. He is urged to use all powers supplied by God-given brains to inquire into the cause and prevention of disease, and is unhampered by any orthodox rule in his treatment of disease.

This league has convinced some legislators that the establishment of a National Board of Health is a conspiracy on the part of the regular profession to establish a medical trust, through restrictive laws. If such a department should be established, homeopaths, osteopaths, and what not will clamor for positions of authority in this government service.

If any of these followers of sectarian medicine can prove that they have ever invented an instrument of precision, isolated a disease-causing germ, added one whit to our knowledge of anatomy, physiology, hygiene, sanitation or preventive medicine, or have made a single valuable discovery in the field of diagnosis or therapeutics or the thousands of other scientific items that go to make up the great campaign for health and welfare of mankind, I for one would urge representation of that medical sect on such a medical advisory board.

Our friend Satterthwaite of New York has advocated the recognition of sectarian medicine in our medical societies, believing that good would follow the discussion of their papers. Relaxation and considerable amusement might be afforded by such a procedure, I have no doubt. But I do not think we should profit especially by listening to "The Technic of Absent Treatment for Transverse Presentation," "Osteopathic Management of Diphtheria," "Mechano-therapeutic Treatment for Myopia," "Christian Science Treatment for Stricture of the Urethra," "Homeopathic Cure of Eclampsia," "The Influence of Exercise in Complete Tears of the Perineum," "Chiropractic Treatment of Delirium Tremens," "The Influence of New-Thought on the Child-Labor Question," *et cetera ad nauseam*. I think we can get along without these.

What Do to Combat These Sinister Influences?

But, seriously speaking, how are we to combat these damnable influences so injurious to scientific progress and so seriously affecting the laity? Education is the only solution of the problem. More practical education for physician, as previously pointed out, and drastic means to offset the pernicious influences of medical vultures and asinine meddlers.

We have remained silent to these indignities too long. Dignified silence is no longer a virtue, but a curse. All of these freak systems have their modicum of truth

as a basis, but the financial success they attain in treating the gullible for all sorts of conditions casts opprobrium upon scientific medical practitioners. Let us investigate thoroughly the advantages of all, explain their limitations and destroy the incentive of the public to consult the fakers. As Jacobson says (*J. A. M. A.*, Jan. 14, 1911): "Legislation has done no more than recognized the systems, and given representation to them on our examining boards. This is not a cure nor yet a palliative, indeed it safeguards, wet-nurses and perpetuates these systems."

Are the public under any obligation to support a profession who unselfishly seek to prevent the various diseases, the treatment for which renders them material gain; the profession which holds no patents, inventions or secrets, but whose members gladly give the benefit of their discoveries to mankind, who are doing more at the cost of actual personal discomfort, physical and mental energy, for charity than any class of people engaged in philanthropic pursuit? The medical profession has done and is doing more for the betterment of mankind, and is less appreciated for its efforts than any other class of workers in the field of human endeavor.

The military man who directs a campaign, at the cost of thousands of lives, hundreds of thousands of sick and wounded, and millions of dollars, receives the applause of the world. He is hero-worshipped for centuries. Learned people can discourse at length on the life and achievements of such monuments of selfishness as Alexander, Caesar and Napoleon, but what do they know of Jenner Pasteur, Behring, O'Dwyer, Reed, Carroll or Ehrlich? Who was the real hero of the recent war? Dewey or Carroll? What has the nation done for Major Carroll's widow and children?

If our children were to be taught something of the real achievements of science for the preservation of life and health, I doubt if in after years ignorant fakers could convince them that vaccination is a humbug, antitoxin "unnecessary and dangerous," that filth, mosquitoes, flies and fleas have nothing to do with disease, because "all is mind and mind is all."

How many deaths are due to hydrophobia as compared with quackery? Yet, by legal measures, dogs are muzzled. Could not some action be taken to muzzle the ignorant fakers who are giving such pernicious, death-dealing advice?

Try a Campaign of Publicity

Patent-medicine interests are spending hundreds of thousands of dollars in newspaper advertising, sending out almanacs and what not to get their wares on the market. I believe it not below the dignity of the American Medical Association to use some means of reaching the masses in somewhat like manner. Pamphlets for free distribution on such subjects as: What scientific medicine has accomplished for mankind; why physicians do not advertise; the methods of quack practitioners, composition of the average patent-medicine tonic, and so on. Many vital questions may be brought to the attention of the public by such missionary tracts.

Something in this line has already been undertaken by the Association, but I believe that the employment of these measures should become more general. Certainly nothing can be done through newspapers, for they are hand in glove with the patent-medicine and quack interests because of the income from advertising space.

In giving vent to our wrath against extra-professional grafters, we must not forget the wolves parading in sheep's clothing in our midst. The hypocrites who are secretly hobnobbing with newspaper reporters and using all the other underhanded means of gaining advantage over their brother physician should be handled without hesitation. The man who is a party to the graduation of an ignoramus into our ranks should be promptly kicked out of medical society.

I believe that we may take a lesson from the methods of the Anti-Saloon League. In a few years, by fighting fire with fire, namely, engaging actively in politics, it has closed more saloons than the W. C. T. U. could close in a century. The time has come for action, and so let us not be negligent in the performance of our solemn duty, to our profession, to our country, and to our Creator.

The Radical Cure Of The Social Evil

The Dangers of Popular Instruction on Sexual Topics

By A. L. BENEDICT, M. D., Buffalo, New York

WHILE the writer does not wish to oppose the movement toward popular instruction in sexual matters, it seems worth while to point out certain dangers in this policy, as well as the fact that instruction is not going to effect a radical cure of the sexual evil.

The Child's Precocious Knowledge of Sex Matters

In the first place, the somewhat cynical view may be advanced that the average child is already pretty well versed in sexual hygiene, physiology and pathology. Marked differences are, of course, to be expected, according to locality, social standing, degree of segregation during childhood, and so on, so that no general statement can be made without danger of contraversion. For this reason, no apology will be made for alluding to personal experience.

The "crowd" or "gang," of which the writer was one, ranging in age from five to ten, and representing three or four public schools and one or two rather fashionable private schools, in a city then of about a hundred thousand population, was fairly well informed in sexual matters from a number of sources, mostly untraceable, but certainly not due to anything approaching the formal instruction now advocated.

Without going into unnecessary and possibly objectionable details, it may be said that our childish lore included about all that the lay adult knows of such matters, and more than it is absolutely essential that so young children should know with regard to hygiene and morals. With certain exceptions, also, quite analogous to those in adult society, our standards were quite high. For instance, the solitary vice was warned against, we knew enough to avoid grown persons of low character, and, as an organization, we punished both physically and by ostracism the seducers, aged five and six years, respectively, of a girl of less than four.

So far as can be judged, sexual information is pretty generally diffused among children, say, after the age of ten in boys and of twelve in girls. It is obvious, then, that, to secure certain of its advantages, any scheme of general instruction of the youth must anticipate the average age of puberty by at least a year, unless it is found to be feasible to ascertain the age of puberty in individual cases, in schools and similar aggregations of children.

The Dangers of Formal Instruction

It seems, to the writer at least, questionable whether it is desirable to give instruction by lectures, pamphlets, and the like, at such an age. At any rate, it should be clearly understood that, to do so, cannot fail, in the average instance, to interfere with the desires of parents who wish to keep their children in a state of innocence, and that it will inevitably result in the handing down of information to younger and younger children. Moreover, if the scheme of formal instruction should prove to be harmful by actual experiment, it will be impossible to discontinue its effects immediately, as the information given will persist, in more or less accurate form, for at least a decade, perhaps for a generation or more.

These considerations are offered, not in the sense of opposition, but because they should be seriously and widely studied before attempting to put any plan of instruction into execution. Meantime, the writer cannot refrain from holding out for approval or disapproval the less formal plan of individual observation and of instruction, according to the necessities of the case, by parents, physicians, clergymen, teachers, etc., who may well associate themselves for the sake of gaining accurate information and in order to cover the ground as completely and consistently as possible.

Another deduction from the premise that the youth is already pretty thoroughly conversant with sexual matters ought not to

escape us. Any system of lectures or pamphlets, to receive due respect and to produce a good result, instead of merely suggesting vice, must be accurate and must arouse interest by increasing the knowledge already possessed.

It is easy enough to frighten an audience by exaggerated statements and to overcome the exceptional boy or girl who has been kept in a state of innocence until adolescence is reached, or to do good in the exceptional instance in which unisexual or bisexual vices have been practised without full realization of their physical and moral harm. But we must think of the ultimate effect on the average, intelligent, already pretty-well informed and curious boy and girl.

Personal Safety, Not Morality, Will Become Aim

No matter what the tone of the lecture or pamphlet, however much it dwells on moral issues, however fully it deals with the physical terrors of venereal disease and pregnancy, and however it may ignore the fact that these terrors are often escaped by good luck and avoided by precautionary measures, it must be seriously considered that, in a large number of instances, the ultimate effect of instruction will be *to draw lines of safety, not of morality*, and to institute a search for a means of *gratifying passion without suffering the consequences*.

The writer would emphasize the belief that ignorance or information of sexual details has very little to do with morality, in either sense. General conceptions of propriety are practically inevitable, in a civilized state of society, among boys and girls who are *compos mentis*. There may be cited the case of syphilis of the Drs. McDade (Am. Jour. Clin. Med., Jan., 1911, p. 110), " . . . . he went to visit in a farmer's family for a few days. An ignorant and innocent girl of eighteen years was taken advantage of, during this time. . . . . The girl claimed that her parents never had cautioned her to be careful with boys and men or taught her the danger and sinfulness of fornication. She said her minister never, to her knowledge, preached a sermon warning young people of the dangers of indulgence before marriage." Without any intention of defending the man or of assenting to the dictum of certain ultramoral persons that sexual indulgence ought always to be punished with venereal disease, consider for a moment the insincerity of the girl herself, and the effect of sexual instruction on such a being!

General Conceptions of Morality Are Understood

General principles of right and wrong are common property. If that particular girl is an idiot, she would not have been amenable to instruction, but should have been specially guarded, preferably in an institution where the sexes are segregated and all inmates closely watched. If in the possession of normal faculties, a girl fairly mature who would give herself up to a man in the course of a few days' visit could undoubtedly gain considerable valuable information from a course of lectures. If the man in question presented fairly marked signs of syphilis, she would probably have escaped this particular infection and might have developed into a skilful amateur, but as to "morals," or even permanent negatively good conduct, we have very grave doubts.

There is no question but that our society is very far from being what it ought to be. Whether it is worse than in the past, it is practically impossible to say. The natural tendency is to think that matters are getting worse, but as we grow older, we not only learn of more instances of immorality but the reserve and timidity which often restrain the youth grow less, and, especially in the case of a physician, acquaintances as well as patients are more likely to lay bare an evil private life. At any rate, an optimistic view is difficult for one who does not deliberately hide his face in the sand.

Reflections on Seduction and Prostitution

It is not the purpose of the present paper to deal with the subject of prostitution. Indeed, an observer who is at all cynical is inclined to ridicule the idea of a white-slave trade and to wonder how houses of prostitution can exist.

In several particulars, the writer has observed conditions so different from those ordinarily described by moralists that it

seems worth while to make the following observations.

The subject of the verb "seduce" is not necessarily of masculine gender. This fact should be understood, not in derogation of womanhood, but because, in endeavoring to treat a diseased condition, we must base our remedy on actual conditions. Two of the worst rakes in the medical profession that we have personally known were started on their career by their female teachers while they yet were little boys.

The writer holds that the purity of childhood should be equally sacred to society and equally protected by the law, without regard to sex. Even if this view is not accepted, the two instances mentioned illustrate the wisdom of protecting the little boy, for the sake of the ultimate indirect effect on female virtue. At a conservative estimate, these two men, precociously started on a sexual life, have collected their indebtedness from the opposite sex a hundredfold.

The seducer by no means is always unwilling to marry his victim. In many instances, the opposite is the case, and in many more, neither party covets marriage.

Church organizations have, in the writer's experience, been responsible for a large number of social disasters.

Pious men are, so far as girls of good intentions are concerned, more dangerous than men of the world. In the first place, the latter are more blasé and less likely to be carried away by accumulated passion, less subject to personal attraction, and more apt to realize just what a career of vice means to a girl. In the second place, the pious man is apt to draw a sharp line between right and wrong, while the man of the world recognizes not only black and white but various shades of gray, and he may commit a wrong act, while respecting principles of honor and what he is apt, flippantly, to characterize as "the rules of the game."

Young Women Should Be Chaperoned

Without in any way casting doubt on the ability of the average girl to take care of herself, the writer is more and more inclined to favor a reasonable system of chaperonage. Even more important than a literal chaperonage is a sufficient mingling of adult and adolescent society, so that boys and girls shall regard their parents, mature relatives and friends, not as spies and custodians, but as fellows; shall acquire proper social standards by which to gauge their young acquaintances; and shall regard social affairs as something broader than opportunities for mating, while, on the other hand, parents shall have an opportunity to judge of the character of their children's associates.

Notwithstanding what has been said in favor of chaperonage, a single couple is better than a party of four. A wise woman, who brought up five girls to be all they should be, went further than this, saying that she would rather have one of her girls out in the evening alone with a young man whom she knew than with a good many of the young married women.

The writer can not help feeling that morality, of any kind, cannot be enforced by fear of punishment. Many persons become sexually immoral simply because they have no interests beyond their appetites and physical comfort. On the other hand, it is surprising how often brain-workers display, not only marked sexual vigor, but laxity of conduct. Thus, while occupation with and interest in higher things undoubtedly conduces to moral conduct, the sheet-anchor of good behavior is a genuine moral character.

At the risk of seeming old-fashioned, it may be observed that a plausible excuse for violating any moral principle, for selfish pleasure, may readily be invented unless morality is directly grounded on religion.

There can be no question but that a girl who amuses herself with men's caresses and who expects to be engaged three or four times before she is married is safeguarded to some extent by losing her innocence—or shall we say, ignorance? Likewise, there is no question but that many young persons of both sexes are benefited, both as to actions and general intentions, by instruction in sexual matters. But innocence has an old-fashioned charm and appeals to the chivalry of any man but a brute, and the really chaste girl can get along very well with an exceedingly meagre knowledge of obstetrics, gynecology and venereal diseases, but having a clear conception of general principles of propriety.

The Chemistry of the Alkaloids*

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EDITORIAL NOTE.—Because this article gives a clear and concise view of the various plant principles, including glucosides, plant toxins, etc., as well as the true alkaloids, we have "borrowed" it from Prof. Pammel's "Manual of Poisonous Plants," of which it forms one chapter.

THE term "alkaloid" is a relic of an early method of nomenclature, namely, the method of naming substances without reference to their fundamental properties. For example, the name "oil of vitriol" does not describe sulphuric acid except that it has a deceptive resemblance to an oil and was originally produced from green vitriol. The word "alkaloid" literally signifies a substance resembling an alkali. They do form salt-like compounds with acids, but here the likeness as to specific properties ends.

It is only about one hundred years since the facts as to alkaloids began to accumulate. The first separation of these compounds was made in 1803 by Derosne, but their basic character was not noted until three years afterward by Sertuerner while studying opium. Before this time many plant extracts were known to contain some very active compounds, usually called principles, but their isolation and the determination of their composition and properties date from the first quarter of the nineteenth century.

The first alkaloid that was prepared (and reported) according to the usual method of procedure of the chemists, namely, obtaining the pure compound and then determining its chief properties, was morphine. Although this was done about 1806, it was not until some eleven years afterward that the report attracted the attention of chemists sufficiently to start the investigation of other substances for the presence of similar compounds, with the result that new compounds of this class have been separated and described each year since this date.

*Reprinted from Pammel's "Manual of Poisonous Plant's." Published by *The Torch Press*, Cedar Rapids, Iowa. Price $1.50.

The property that especially characterized these compounds was their basicity, i. e., they formed salt-like compounds with acids, although they were but weakly alkaline to the usual indicators of alkalinity.

Composition and Properties of Alkaloids

The alkaloids all contain nitrogen, carbon and hydrogen, and all but two of them contain oxygen. A large proportion of the alkaloids are nonvolatile, solid, crystalline compounds, while a few are volatile liquids but contain no oxygen. They are generally insoluble in water, but are generally soluble in alcohol, and possess varying degrees of solubility in ether, chloroform, amylic alcohol, and carbon disulphide. These latter facts of solubility are often made use of to separate the alkaloids from each other, and from other substances. The salt-like compounds, on the other hand, generally possess a measurable degree of water-solubility, but not in the other solvents mentioned.

Alkaloids differ from the true alkalis, like potassium and sodium hydroxides, in the fact that the molecules of acids and alkaloids unite with each other without forming other products. In this property, they resemble ammonium, HN_3, when it forms such salts as ammonium chloride, NH_3HCl, or NH_4Cl. However, this property does not characteristically belong to the socalled true alkaloids, since the amins, purin bases, and ptomains react in a similar manner.

The volatile alkaloids, represented by nicotine and coniine, possess disagreeable odors suggesting in part that of ammonia. The solid alkaloids, represented by strychnine and morphine, are odorless, but have a bitter taste—often very characteristically bitter.

Physiologically, the alkaloid is quite generally a very active intoxicant, acting directly on the nervous tissues and producing results all the way from the atonic to the strongly tonic effects. The extreme effects are seen in the muscular excitation of strychnine and the depressing action of morphine, or in the heart stimulation of atropine and the depressing effects of cocaine.

Occurrence and Natural Combinations of the Alkaloids

The alkaloids are peculiarly a plant product, and probably may be regarded as a protective agency to preserve a given species of plants. They are deposited in various parts of the plant, but commonly in the seeds. The seeds containing, as they do, the vital parts of annual plants (and also perennials) are protected from destruction by microorganisms and by animals using them for food by the intoxicating property just referred to. A similar case is that of the glucoside amygdalin as found in the seeds of several of the rosaceæ. The enzyme present in the seed, under proper conditions of temperature and moisture, decomposes it into glucose, benzaldehyde, and hydrogen cyanide, or prussic acid, this latter compound acting as the intoxicant.

The alkaloids are not widely distributed in the plant world, although they are found in several orders of families of plants. Three families are especially characterized by the presence of alkaloids, namely, the poppy family, or Papaveraceæ, the nightshade family, Solanaceæ, and the Rubiaceæ.

The basic property of the alkaloids suggests the probability of their occurrence in combination with acidic compounds more or less characteristic of the plants in which they are found. In some cases the socalled alkaloid appears to be similar to the glucosides, i. e., it can be hydrolyzed. For example, cocaine can be hydrolyzed into ecgonine ($C_9H_{15}NO_3$), benzoic acid ($C_6H_5CO_2H$), and methyl-alcohol. Others are real glucosides like digitalin and solanin. It is undoubtedly true that the latter two should not be classed with true alkaloids, but with the glucosides, and are like caffeine and theobromine in this sense, i. e., that they are substances that have been classed with the alkaloids on superficial grounds, such as bitter taste, but really have no close chemical relation with them. Caffeine and theobromine are now known to belong with the purin compounds. The purin compounds are basic, and hence their classification with the alkaloids.

The acids with which the alkaloids are often united are somewhat common in plants, or, in a few cases, they are characteristically found in combination with the given alkaloid, e. g., meconic acid in combination with morphine in opium, or aconitic acid united with aconitine. Other acids form compounds with the alkaloids in the various plants in which they are found. Among these acids are tannic, citric, malic, and quinic. The combinations are easily broken up by strong bases, like potassium or sodium hydroxide, and in this way they may be separated from the acids.

Since the true (basic) alkaloids are generally insoluble in water, while alkali salts of the acids are soluble, the alkaloids may be separated by treatment with potassium or sodium hydroxide and filtering out the insoluble alkaloid. They are then further purified by the formation of the soluble salt and reprecipitating the alkaloid by an alkali. The basic alkaloid is then dissolved by the appropriate solvent and crystallized.

In this connection, it is interesting to note that an alkaloid rarely exists alone in a given plant but is accompanied by several others. Thus crude aconitine, as extracted from the roots of the aconite plant, aconitum napellus, contains nine alkaloids; in the extract from poppies, called opium, upwards of seventeen alkaloids have been separated and studied; from the socalled cinchona, or Peruvian bark, extracts, some thirty-three distinct alkaloids have been isolated; strychnine is accompanied by brucine in strychnos Ignatii, or Saint Ignatius bean.

Classification and Structure of the Alkaloids

Owing to the basic character of the alkaloids, and the fact that they always contain nitrogen, it was suggested that they were connected with ammonia in some manner, and if so, that they might be readily broken down by distilling them with potassium hydroxide, or caustic potassa. They were

regarded as derived from, or at least connected with, ammonia. Hoffman, who added much to our knowledge of the amin compounds, considered that they were of the ammonia type and were tertiary amins.

In attempting to find some reaction characteristic of the amins, Gerhardt and others heated the alkaloids with caustic potassa, but were unsuccessful in obtaining any results that showed that their basic character was due to this structural cause, although some of them do possess some properties resembling the amins. Others more closely resemble the ammonium compounds. Products obtained by heating some of the alkaloids with potassium hydroxide and distilling the volatile products were found to be the same as were obtained from the destructive distillation of bones.

Later (in 1834) a study of bone-oil by Runge led to the separation of a pure compound which was shown to have the formula C_5H_5N, known as pyridin. This was later shown to be a cyclic (heterocyclic) compound like benzene, one group, "CH," being substituted by nitrogen, i. e., trivalent nitrogen. A number of alkaloids have been shown to be constructed on this nucleus by substituting various hydrocarbon groups, and are known as the pyridin alkaloids. Among the pyridin alkaloids and derivatives from them are nicotine, coniine, atropine, cocaine.

The study of the alkaloids by noting the action of potassium hydroxide proved to be a fruitful one. In 1842, Gerhardt obtained a compound from the destructive distillation of quinine that was a new substance. This was named quinolin, because of its origin from that alkaloid. It was later shown to be structurally composed of a benzene and a pyridin nucleus joined by two atoms of carbon in common; the further complexity is due to substitution in this nucleus.

Most of the alkaloids are esters and are consequently quite readily separated into the two parts of such compounds, namely, the acid and the basic parts. A study of these constituent parts gives the complete facts as to the structure of the original compound. The esters may be decomposed by acids, alkalis, and water.

The nucleus quinolin has been found in quinine, cinchonine, cinchonidine, strychnine, and brucine, and, hence, these compounds are known as the quinolin alkaloids.

The isoquinolin alkaloids have a nucleus isomeric with the quinolins, or what is known as the quinolin group. Like quinolin, isoquinolin has the empirical formula C_9H_7N. The difference between this base and quinolin, so far as structural constitution is concerned, appears in the position of the atom of nitrogen. Not only is the fundamental nucleus different in these two classes of alkaloids, but groups that enter into these nuclei are different, thus leading to a large number of possible compounds. To this group of alkaloids belong especially the alkaloids of opium, for example, morphine, thebaine, narcotine, narceine, papaverine, and codeine. Here also belong hydrastine, hydrastinine, and berberine.

The Purin Group of Alkaloids

These compounds are not properly included with the alkaloids, but they belong with the purin compounds, or xanthin bases. The nucleus (purin), or the atomic framework, shown by Fischer to characterize the xanthin bases (such as uric acid, the xanthin derivatives, guanine and adenine), is found in caffeine, theobromine, theophylline, compounds that are as yet classed with the alkaloids.

The structural and mutual relationship of these to each other and to the xanthin bases has been determined synthetically and hence their classification is not a doubtful question. The alkaloids are methyl-xanthins. Caffeine is a trimethyl-xanthin, and theobromine and theophylline are dimethyl-xanthins, the latter being an isomere of theobromine. The alkaloid of tea is sometimes called theine, although its identity with the caffeine of coffee has been recognized for a long time.

There are several alkaloids whose structural relations have not been determined. Among these are pilocarpine, colchicine, and physostigmine. For the description of these alkaloids, see statement in this text under their appropriate heads.

Physiologic Action of Alkaloids as Determined by Their Structural Composition

It is within comparatively recent time that pure alkaloids have been prepared, and,

consequently, that their physiologic effects could be determined. Some, like quinine, were prepared in a fairly pure condition during the first half of the last century, but most of them belong to a later period.

Attention has been called to the fact that a single alkaloid is rarely produced by a given plant, and, hence, in the usual extracts from the plant there are several alkaloids exerting varying physiologic effects. These constituents vary in amount according to a variety of conditions under which the plant may produce them. Accordingly, the extracts of such plants will vary in the proportion of the alkaloid present. For example, in cinchona bark the amount of quinine may vary from 2 to 13 percent. The physiologic effect of the various cinchona extracts naturally will be markedly different with such extremes of composition, i. e., with reference to the alkaloid quinine.

In 1869, Crum, Brown, and Frazer called attention to the relation of the structure of organic compounds to their physiologic effects. They were studying the comparative action of strychnine and brucine, and although their knowledge of the structure of these two compounds was not complete, yet they were able to trace a relation in this case. They found that the presence of methyl or ethyl groups strongly affected the active properties of these compounds. For example, brucine is regarded as the dimethoxy derivative of strychnine.

The discovery that most alkaloids are built on one of three nuclei—pyridin, quinolin, and isoquinolin—added new zest to the study of the physiologic effects of certain organic groups when substituted in organic compounds.

Quinolin is a strong antipyretic and antiseptic, but produces other results that are decidedly toxic. By introducing the organic group methoxy, CH_3O, a compound is produced from which several derivatives have been formed which possess antipyretic properties that have led to their use in medicine. These are known as analgen, kairin, kairolin and thallin. Quinine differs from cinchonine in containing the methoxy group in the place of a hydrogen atom. This addition by substitution produces a much stronger antipyretic.

The antipyretic effect of the methoxy group is shown in some of the derivatives of anilin. For example, anilin is a highly poisonous compound, although it has good antipyretic properties. The addition of a similar group to the one in question produces a compound known as acetanilid, or antifebrin. The group added, CH_3CO, is known as acetyl. In introducing the methyl group into acetanilid, its antipyretic properties are somewhat reduced but its antineuralgic properties are increased. The addition of hydrogen to quinolin increases its toxic properties, while the hydroxyl group increases the antifebrile results. The antipyretic properties of antipyrin are probably due to the two methyl groups present in the molecule.

The ethyl group, when added to organic compounds that are poisonous, in many cases at least, decreases their toxic character. The same is true of the acid, or carboxyl, group, When morphine is heated with hydrochloric acid, water is formed (as in hydrolysis) and a new compound known as apomorphine. This treatment has developed two hydroxyl groups. This new compound is an excellent emetic. The introduction of two acetic-acid groups changes morphine into a mildly acting sedative known as heroin. Finally, the purin alkaloids owe their properties to the methyl groups introduced into xanthin, that is to say, as distinct from the xanthins.

The accumulation of facts in this direction is increasing rapidly, and some generalization from them will do for medicine what antisepticism and anesthetics have done for surgery, and change it from an empirical to a scientific basis.

The Twelve Groups of Alkaloids

Blyth, in his work on "Poisons: Their Effects and Detection," has classified the alkaloids and other organic poisons into the following groups.

First group: Liquid volatile alkaloids, under which there are grouped the alkaloids of conium, (coniine, conhydrine), tobacco (nicotine), piturine, from duboisia hopwoodii (belonging to the same family as tobacco), and sparteine, from the common broom (spartium scoparium.)

Second group: The opium group. This contains the alkaloids from the poppy, the more important being morphine, thebaine, codeine, of the morphine group; and papaverine, papaveramine, codamine, laudanine, narcotine, of the papaverine group.

Third group: The strychnine, or tetanus-producing, group of alkaloids. Under this head are included the alkaloids strychnine and brucine, derived from strychnos nux vomica, of the family of Loganiaceæ. The alkaloids are aspidospermine, (obtained from quebracho, aspidosperma quebracho blanco of the family of Apocynaceæ), and at least four others; the alkaloid from the pereira bark (geissospermum vellosii), pereirine; the alkaloids from gelsemium (gelsemium sempervirens, of the family Loganiaceæ), gelsemine and gelseminine; the cocaine alkaloids obtained from erythroxylon coca, cocaine, hygrine, etc.; the alkaloids from the roots of the European corydalis cava, corydaline, corybulbine, and six others. (Corydaline, in large doses, causes epileptiform convulsions.)

Fourth group; The alkaloids aconitine, atisine and japaconitine, of the aconite group, obtained from several species of aconitum, for instance aconitum napellus, aconitum heterophyllum.

Fifth group: The mydriatic group of alkaloids. The alkaloids of this group are: atropine, obtained from atropa belladonna and datura; hyoscyamine, obtained from datura, hyoscyamus, scopolia carniolica, and duboisia (hyoscine, pseudohyoscyamine being also obtained from these plants); scopolamine, from some of the same plants as the preceding; solanine—which is, however, regarded as a nitrogenized glucoside—obtained from various species of solanum; solanidine, with stronger basic properties than solanine, obtained from plants of the same family; cytisine, obtained from laburnum (cytisus laburnum of the family of Leguminosæ) and found also in a considerable number of other plants of the same family.

Sixth group: The veratrum alkaloids, among which are jervine, pseudojervine, cevadine, obtained from various species of veratrum, as veratrum album, veratrum viride.

Seventh group: Physostigmine, the most important alkaloid of the group derived from the calabar bean (physostigma venenosum), and calabarine.

Eighth group: This contains pilocarpine, obtained from the leaves of jaborandi (pilocarpus pennatifolius), and three other alkaloids, viz., jaborine, isopilocarpine, pilocarpidine. Jaborandi belongs to the family of Rutaceæ.

Ninth group: Taxine, obtained from the yew tree (taxus baccata).

Tenth group: The curare alkaloids, which are obtained from the curare plants (strychnos toxifera and strychnos castelnæi, of the family of Loganiaceæ.) The alkaloids are tubocurarine, curine, and several others. Protocurine, obtained from the latter species, is a slightly toxic substance.

Eleventh group: Colchicine is the only member, this alkaloid being obtained from the seeds and roots of the common meadow-saffron, or colchicum (colchicum autumnale).

Twelfth group: muscarine, from the amanita muscaria, or fly-agaric, is the only representative.

The Glucosides

The glucosides, widely distributed in plants, are compounds of glucose and organic acids, and are certainly of great importance in connection with the poisonous principles found in plants. They have been grouped by Blyth into four groups, namely:

First group: The digitalis group, consisting of digitalin, digitonin, and digitogenin, all found in the common foxglove, digitalis purpurea.

Second group: These glucosides act on the heart. They are: antiarin, obtained from antiaris toxicaria, the upas tree; helleborin and helleboretin, found in helleborus niger, helleborus viridis, helleborus fœtidus; euonymin, a resinous substance found in wahoo (euonymus atropurpureus), which is a powerful heart poison.

Third group: This contains: thevetin, obtained from thevetia neriifolia; strophanthin, from strophanthus hispidus of the Dogbane family, belongs to this group of heart poisons, but it is not a glucoside and only partly crystallizable; scillain, from squill; adonidin, from the root of adonis

vernalis of the Crowfoot family; oleandrin, from the oleander; nerlin, also from oleander, sometimes called the oleander digitalin; the poisons of the Madagascar ordeal plant (tanghinia venenifera).

Fourth group: This contains the digitalin-like apocynin, from the common dogbane and other apocynums; erythrophlein; convallamarin, a glucoside from the lily-of-the-valley; coronillin, from coronilla; cheiranthin, from cheiranthus. These behave like the digitalins.

The Gluco-Alkaloids

The gluco-alkaloids represent a class of compounds intermediate in connection between the alkaloids and glucosides. The achilleine, found in yarrow (achillea millefolium), and solanine present in various species of solanum, should be mentioned. The latter substance has, however, been referred to in connection with the alkaloids.

The Saponins

The saponins are poisonous. When dissolved in water they form solutions which froth. Among these, mention may be made of saponin and senegin.

Other Vegetable Poisons

A third division of poisonous substances includes those which cannot be readily classified, and under this head we have santonin, a lactone, found in the heads of artemisia sp. A second division of this group is represented by mezereone, obtained from daphne mezereum. A third group is ergot of rye, containing ecbolin, secalintoxin, and other substances.

Picrotoxin, Cicutoxin, and Toxins

Picrotoxin is the active principle of the Indian-berry (cocculus indicus, or menispermum cocculus), which contains the active principles picrotoxinin, picrotin, and menispermin.

Tutin, a nonnitrogenous glucoside, is obtained from coriaria sermentosa and other species.

Another poison belonging to the picrotoxin class has been isolated from the Japanese illicum anisatum, a member of the Magnolia family. This plant is sometimes called the Japanese star anise. To this group may also be added cicutoxin, obtained from the cowbane; the oil of savin, obtained from the common savin (juniperus sabina); croton oil, expressed from the seed of croton tiglium; the toxalbumins of the castor-bean, and of abrus; ictrogen, from various species of lupines (lupinus luteus, lupinus hirsutus, etc.); the toxic substances in the cotton-plant seeds; toxic substances in various species of lathyrus; the toxic substances in arum; those in the black bryony (tamus communis); the toxalbumin of the black locust; and the poisonous substances of the male shield-fern.

The Animal and Plant Toxins

Another group of poisonous substances is included under the head of ptomaines and animal toxins. The word ptomaine is used in a rather indefinite way, and is open to objection, but the classification, by Blyth, as an animal toxin is also objectionable. Many of these toxins are the products of bacteria. Some of these poisons, however, are the products of higher plants (as toxins of the black locust, of abrus, etc.). The groups given by Blyth are the amins, under which head we have methylamin, found in the cultures of the comma bacillus, and the trimethylamin, nontoxic, found in a variety of putrefying substance.

The Amins

The amins are basic and originate from ammonia; they include the diamins, belonging to the amin series, which are formed in putrefactive substances. Of these, we have neuridin, generated in putrefying substances; cadaverin, found in cultures of spirillum and putrid animal matter; mydalein; guanidin.

The cholin group includes neuridin, betain, and muscarin. Muscarin has been referred to elsewhere. Neurin is intensely poisonous. (Atropine is an antidote to neurin.) Tetanin produces tetanus. Tetanotoxin, from tetanus victims, produces tremor-paralysis and violent convulsions. Mydatoxin, contained in putrid horse flesh, is poisonous in large doses, causing lacrimation, diarrhea, and convulsions. Tyrotoxicon, isolated by Vaughan from milk, is toxic. The susotoxin, isolated from hog cholera, is said to be quite toxic.

The last group of poisonous substances includes the organic acids, the most important of which is oxalic acid. This substance is widely distributed in the vegetable kingdom, both in the free state and in combination with lime, soda, and potassa. It occurs in some species of the geranium, spinach, phytolacca decandra, pie-plant, rumex acetosa, and in atropa belladonna, in connection with potassa. In the Russian thistle and in salicornia, it occurs in combination with sodium. In clover, apple twigs, begonia, and many other plants, it occurs in the form of socalled compound aggregate crystals, or rosettes, of calcium oxalate, but in the onion and some other plants as simple crystals. In aroids and Virginia creeper it appears in the form of needle-shaped crystals, known as raphides. These are formed during the metabolism of the plant, the oxalic acid being set free and, uniting with the lime in the plant, it forms calcium oxalate.

Oxalic acid is commonly used by dyers and calico-printers, and also by curriers and harness makers for cleaning leather, to remove iron stains, to bleach straw, and for many other purposes.

Several cases of poisoning have been attributed to the use of plants (like the sheep-sorrel, oxalis, etc.) that contain large amounts of oxalates. Quite a number of cases of poisoning from this acid are reported, especially in Europe.

The smallest dose of oxalic acid known to have destroyed life, according to Dr. Taylor, is 60 grains. Oxalic acid acts upon the central nervous system. There is temporary loss of voice, burning in the throat, burning in the stomach, vomiting, especially bloody matter, weak pulse. Locally it acts on the mucous tissues.

Sexual Impotence Resulting From Typhoid Fever

By WILLIAM J. ROBINSON, M. D., New York City
Editor of The American Journal of Urology, The Critic and Guide, and The Medical Review of Reviews

WITHIN the past fifteen months the writer has had under treatment four cases of sexual disorder, the history of which seems to point conclusively to typhoid fever as the sole etiologic factor, and for this reason, as well as on account of several other points connected with them, they are, in his opinion, worth recording:

Azoospermia Following Typhoid Fever

Case 1. P. N., merchant, 35 years old, married nine years. Three years after marriage the wife had a miscarriage. At the age of 30 he had a severe attack of typhoid fever, with very high temperature and delirium, and a tedious convalescence. He went without intercourse, both on account of general weakness and lack of desire, for five months. On attempting intercourse then, he found ejaculatio præcox and total lack of any pleasurable sensation. Inquiry elicits the fact that he masturbated excessively from 14 to 17, but then gave up the habit entirely and indulged in moderate intercourse. When married, his sexual powers were normal, and for the first year he indulged excessively; is sure that he noticed no diminution of sexual desire or power until his attack of typhoid. Has never had venereal disease.

His urine is clear; no shreds; slight excess of phosphates; no albumen; no sugar. There is no stricture, but excessive tenderness of the posterior urethra. Prostate is normal; expressed prostatic secretion is normal. Microscopic examination of liquid from the seminal vesicles *fails to reveal a single spermatozoon.* Examination repeated a week later yields the same results. Nine examinations were made altogether—in six the semen was expressed from the seminal

vesicles, and in three the fresh semen was obtained in a more natural manner in a condom. Every examination showed a total absence of spermatozoa.

The patient is absolutely sure of the connection of his typhoid fever with his sexual weakness, and in spite of the fact that we must guard against the only too common *post hoc propter hoc* mistake, it would be pushing skepticism too far to doubt, not only the chronologic, but the causative relationship of the two diseases in this case.

As to the complete azoospermia, we are also forced to assume (in view of the fact that the patient's wife *was* pregnant once), that that was also caused by the typhoid fever. But, of course, no scientific proof can be offered on this point. For it is, after all, not so utterly impossible to believe that the wife might have been pregnant from another man. Personally, I am rather inclined to believe that this was the case, and that the patient's azoospermia antedated his typhoid fever. The fact that during four years of marital life—from the marriage to his attack of typhoid—in spite of the fact that they were both desirous of having a child, the wife was pregnant but once, as well as certain indications that the miscarriage was probably not a spontaneous one, rather speak in favor of the correctness of this belief.

The result of six months' treatment was a complete restoration of the sexual function, both so far as erectile power, time of ejaculation and libido sexualis are concerned, but the azoospermia remains as absolute as before.

Nocturnal Emissions After Typhoid Attack

Case 2. Drug-clerk, 24 years old. Unmarried. Complains of frequent night emissions without any erections and without any lascivious dreams. Has no sexual desire whatever, and no erections. History: Masturbated moderately until about 18; indulged in intercourse moderately after that, and felt perfectly normal up to one year ago. Had then an attack of typhoid fever during the course of which *he thinks* he had a slight urethral discharge. He was sick in bed for about six weeks. When he got well he began to notice the night emissions, which he ascribed to the fact that he refrained from intercourse for over three months. When he attempted intercourse, he found it impossible to effect entrance, as there was no trace of an erection. Since then he did not repeat the attempt. In the meantime the pollutions kept on increasing in frequency. He denies ever having had gonorrhea, and the findings corroborate his statement.

The urine is clear, no shreds; prostate normal in size, but rather tender; prostatic secretion normal. Semen contains abundant spermatozoa, normal in shape and size, but with an apparently diminished motility. Testicles rather shrunken, sensitive to the touch. Penis shrunken; no strictures; posterior urethra exquisitely sensitive.

In this case also there is no valid reason to doubt the direct causative relationship between the patient's attack of typhoid and his subsequent sexual disability.

Impotence in a Physician

Case 3. N. T., physician, 40 years old. Had gonorrhea at the age of 20, a second attack three years later (whether a fresh infection or an exacerbation of the old, imperfectly cured gonorrhea he is uncertain) and a third attack at the age of 28. Married at 33. Has two children, perfectly healthy. At the age of 38 he had an attack of typhoid fever—not particularly severe. Convalescence was uneventful, but when attempting intercourse later, he found himself entirely impotent. Libido sexualis was not in the least diminished, on the contrary, it was increased.

Dr. T. has no hesitancy in asserting that in his opinion the impotence is unquestionably the result of the typhoid fever. It might be objected that in this case the impotence may have been caused by the old gonorrhea—the chronic posterior urethritis, which was in a dormant quiescent condition, was stirred into activity by the febrile process. But whether the impotence was due to the typhoid fever directly, or only indirectly, by the latter intensifying an old dormant inflammatory process, is of little importance from a practical point of view. The fact remains and must be borne in mind that sexual impotence may be one of the sequelæ of typhoid fever.

Case 4. This was a case of female impotence. While the term sexual impotence is employed in connection with the male sex only, there is no valid reason why we should not apply it to women also. It is true that the woman's role in the sex act is different from that of the male, but outside of one feature—that of erection—a woman may be as truly impotent as a man. The indifference and even aversion to intercourse, the completion of the orgasm in the fraction of a minute, the extreme lassitude and exhaustion, the feeling of loathing and even physical nausea following the act constitute a symptom-complex to which the term sexual impotence may be applied with full justice, for in practice they render the woman almost as useless for the purposes of sexual gratification as an impotent man is.

Frigidity Due to Typhoid Fever

Mrs. N., 36 years of age, mother of four children, was perfectly normal sexually; during the last four or five years her libido sexualis became considerably accentuated, according to her husband's statement. In the fall of 1909 she passed through a severe attack of typhoid fever. She was seven weeks in bed and it was five weeks more before her health was fully reestablished. She, however, recovered completely so far as her general health was concerned. She even weighs more than she did before her illness. The only physical sign the typhoid left her is a tenderness in the right ovarian region.

But sexually she has undergone a complete metamorphosis. She has a positive dislike for the sexual act, and when indulging in it to satisfy the sexual demands of her husband, the orgasm supervenes "instantly," and leaves her in a state of complete exhaustion. She dreads to think of it. In short, we had to deal with a typical case of sexual impotence in a woman. She asserted that she never felt that way, not once even, before her typhoid, and inquiry elicited the information that during her illness she had frequent lascivious dreams and very frequent orgasms; she had some of them also during convalescence, but they became gradually less, until they left her altogether. And while she feels well otherwise, sexually she is completely crippled.

General tonic, electric, and hydrotherapic treatment produced some improvement in her condition, but the improvement was slow, in fact so slow that I am not sure that it cannot be ascribed to the suggestion element in the treatment instead of to the treatment itself.

During the past year I made it a special point to interrogate carefully every impotent patient as to any typhoid history in the past. And while the histories, where such were present, were not definite enough to establish a positive causal relationship, the *impression* gained was to the effect that such a relationship existed. In some cases a mild degree of impotence existed before the typhoid and became aggravated or complete after the disease, in other cases the impotence came on six months, a year or more after an apparently complete recovery. In short, in many cases the histories are not positive enough to avoid the pitfall of mistaking a sequence for a consequence.

In view of the great prevalence of typhoid fever and the tremendous social importance of sexual impotence, I would suggest that physicians investigate the question of the causal relationship of these two diseases and report their findings to me personally or through the medical press. It is a subject well worthy of further investigation.

The Nez Percés Indians

By CHARLES STUART MOODY, M. D., Sandpoint, Idaho

EDITORIAL NOTE.—This is the sixth installment in Dr. Moody's serial about the Nez Percés Indians. It grows in interest. While it is not strictly "medical," it is filled with matter of intense interest to physicians as well as to physicians' wives. The series will be continued for several months. You will want to read every number.

VI

Captives

BEFORE returning to the Nez Percés that were left behind when the Wallowa branch went on the warpath, I must relate what became of the followers of Chief Joseph after their capture on the Bear Paw ; and in the telling, you will read the greatest wrong ever perpetrated upon a conquered people.

It will be recalled that General Miles promised Joseph that, if he would surrender and prevent further bloodshed, he and his people would be returned to their homes. This was when the chief first came into camp and discussed the subject of surrender, and before General Howard had arrived. The latter arrived the following day and was present at the surrender.

Solemn Promise is Basely Broken

General Howard was stinging under the defeat he had suffered at the hands of the Indians and was childishly bitter toward them, and no sooner did he have the Indians in his power, than he sat about devising means for further punishing them. He thought it would be a grave mistake to return them to their reservation and so expressed himself to the War Department. His opinions were listened to, and the captives were taken to Tongue River, thence to Bismark, where they were kept during the winter in crowded, illy-ventilated huts, with but little fuel, and insufficient food. The next spring these deluded people were removed to Fort Leavenworth, where they were herded like cattle close to the Missouri River.

The sufferings of the poor creatures that dreadful summer can never be told. Exposed to the stifling heat, without adequate shelter, poorly clothed, without proper food, compelled to drink the stagnant water of the river, they died like flies. To a people reared in the mountains of the West, where the air is cool, the water pure, the experience was something indescribable. From Leavenworth they were next moved to Baxter Springs where they were set down destitute and without medicines or care. Seventy of them gave up the struggle, turned their faces toward the West and died.

It must have been that the government feared all the Indians would die, for they were again transported, this time to the Osage Reservation in the Indian Territory. Here they were given a strip of land and virtually told to look after their own support, even though it was late in the fall when they arrived. How many of them actually starved to death that winter will never be known—the deaths appear on the records under less ugly titles.

The President Finally Intervenes

After a time Joseph was permitted to go to Washington, where he laid his cause before the President. The President was struck with the sincerity and candor of the chief. He took the matter under advisement, and it was finally decided to allow the Nez Percés to return farther west where climatic conditions were more nearly the same as they had been accustomed to. They were given a home on the Colville Reservation, in Washington, and there Joseph and the miserable remnant of his people lived until the old chief died, and where a few surviving representatives of his people still reside.

The foregoing is but a brief synopsis of what took place after the surrender. I wish that I might have space to tell you all that happened. I wish that I might be possessed of eloquence of language powerful enough to cause the miserable story to burn into

your soul until the memory of it would remain with you for life.

The treatment of the conquered Nez Percés by our government was barbarous—no other term expresses it. The punishment meted out to the people, whose sole crime was that they fought for their homes, was more savage than any punishment these untutored children of nature ever devised. It would have been far more merciful had the soldiers drawn the captives up in line and executed them. How a nation, headed by men calling themselves Christians, could be guilty of such atrocities surpasses human understanding. How a man could apologize for such actions, as has been done, is beyond belief.

Social and Home Life of the Nez Perces

In considering the social and home life of the Nez Percés, it will be understood that I am speaking of them before they adopted any of the social customs of their white neighbors. The investigators at the present time will find among them a curious blending of the social traits of the savage with those of the Anglo-Saxon, a commixture that is perfectly characterless. In the old days, before the white man made his influence felt, the Indian practised a set of social rules that were doubtless the outgrowth of their environment and were peculiarly adapted to their sphere of existence.

Before entering upon the discussion of the characteristics of the Nez Percé in his home relation and his relation to his fellow tribesmen, it will be necessary to correct an erroneous impression that prevails among persons unacquainted with Indians and their mental make-up.

It is the popular belief that the Indian is a morose, sullen, taciturn and unsociable being. This idea probably gained prominence by the laughable attempts of the verdant "tenderfoot" at conversing with the Indian, than whom no prouder being treads the earth. The Indian resented any attempt at familiarity just exactly as you or I would resent it coming from an entire stranger. Let me illustrate my meaning by recounting a conversation I overheard one day.

A gentleman bearing all the marks of education and refinement was touring the country west of the Rocky Mountains and visited our Reservation. He walked up one day to an Indian friend of mine—a graduate of Carlisle, by the way—who was standing on the stoop in front of my office. The young Indian was garbed in his native dress and had allowed his hair to grow long, as many of them do after returning from college. The tourist walked up to him, reached out his hand and said:

"How big chief? How's your squaw?"

My Indian friend drew his blanket about him, disdained the proffered hand, and replied with the utmost scorn;

"I beg to inform you that I am not a chief, either big or little, and as for my wife, she is enjoying the best of health."

With that he turned on his heel and walked away.

This incident should have taught the eastern man not to attempt to patronize an Indian, but I am sorry to say that it did not.

The Indian is Not Taciturn as Depicted

The taciturnity and moroseness of the Indian has always been due to his misunderstanding of the motives of the white man, or rather, it has always been due to his too acute perception of the motives. The white man has always approached the Indian in a spirit of curiosity, never sympathetically.

How would you feel if, say, an educated Chinaman should come into your dwelling, fumble over your household goods, peer at you curiously while you were at table, ask impertinent questions about your family, insist upon taking photographic snapshots of your children, or do any one of the hundred and odd things I have seen people do with the Indians? You would doubtless exercise your Anglo-Saxon prerogative and kick that celestial's backbone up through his scalp so far that he could dispense with his queue. The Indian does not resent your impertinence in the same manner, but he takes refuge behind an impenetrable reserve.

Indians are not devoid of humor, rather the contrary; they are as appreciative of a joke as any race on earth. An Indian encampment at eventide is a scene of great hilarity, peal after peal of laughter awakes the echoes of the giant hills, and every face wears a smile of contentment. I crave

permission to relate a single incident that will serve to illustrate the Nez Percé's conception of a joke.

The spring that we came among the Indians the salmon "run" in the river was unusually large. The Indians spent weeks in catching and drying the great fish. I was but a novice and appealed to an Indian friend to teach me the art. We were out in the middle of the swift current of the Koos-koos-kia, my Indian friend managing the dug-out canoe, myself holding the baited line. I felt a mighty tug at the hook down in the dark water, and gave it a prodigous pull. It did not yield, and I certainly thought I had snagged a monster. In fact, I said as much to my companion. The latter swung the canoe broadside to the stream and called words of encouragement to me as I fought my big fish. My efforts to land my captive attracted the attention of all the Indians near. They ceased their occupations and watched the battle.

After something like ten minutes I began to have a faint suspicion that I was fast to something less animate than a salmon. When, at last, I looked appealingly at my boatman, he could restrain his glee no longer but broke into a great roar of laughter which was echoed by all the watchers on shore. Then he informed me that my hook was fast beneath a rock in the stream and the action of the current made it appear as though I had a fish on. If I were to return there today, some of those old Indians would most assuredly recall that big salmon, with a pleasant grin.

The Social Organization of the Indian

Let us now get back to the life of the Indians. The family, as with all primitive peoples, was the basis of social organization. The family did not always consist of those bound together by ties of consanguinity, but in many instances allied tribes or settlements came together and were united into a common family presided over by a senate of elders—old men who had grown wise with years. Younger men famed for deeds of prowess or acts of public benefit often were admitted to this senate also. This legislative body met whenever occasion required, generally on the green in front of the camp, beneath the shade of a tree, and discussed the matter or matters that had brought them together.

Each tribe or family promulgated rules for its own guidance without consulting the head council, which I shall consider under another head.

It was necessary that the matter at issue be concurred in by all the members of the council—if there was one dissenting voice it did not become the law. Often weeks were spent in bringing a refractory councilor to a proper understanding of his duty. As a general thing, however, matters were settled very quickly, and when the crier announced in front of each lodge the decision, no Indian thought of questioning it. Implicit obedience prevailed, handed down from a time when their safety depended upon their all moving in unison.

The Indian Woman and the Marriage Relation

The relation of the Indian husband to his wife has been the subject of a great deal of comment, and the Indian woman has been the recipient of tons of misplaced sympathy. Long-haired men and short-haired women who pose as social reformers have shuddered with righteous indignation at what they were pleased to term the "slavery" of the Indian woman.

We, in our "superior" civilization, have placed our women upon a pedestal and worship them; the Indian looks upon the gentler sex as copartners in the battle for existence and as such entitled to bear her share of the burdens. In this he is not far behind certain European peoples who harness their women in the yoke with the oxen and cause them to draw the plow. Nor is he behind the employers of labor in our metropolitan centers, who wring the lives from women and girls in miserable "sweat-shops," for the sake of a few paltry dollars.

All this misplaced sympathy comes about through an inability on the part of the so-called reformers to grasp the very potent and self-evident fact that no people can be civilized by act of Congress, so to speak. Civilization is an evolution, and evolution is remarkably slow. You may educate and Christianize the Indian, you may surround

him with all the examples of civilization, and there still lurks in him the savage instinct. He cannot throw aside the traditions and teachings of ages in a change of the seasons.

You may see an Indian woman bearing a heavy burden while her lord stalks along at her side, or rather in front, burden-free. If you are a student of Indians, your indignation will not rise at the sight, for you will see in it merely a survival of the primitive instinct. In the past the menial duties were assigned to the woman. Hers the task to dress the meat her lord had slain, fetch the wood for the cooking fire, dress the skins that were made into garments or for tentage, in short, perform all the services appertaining to the camp life. When moving time came, it was her duty to strike the tepee, pack the duffle and arrange the camp in its new site. To our educated eyes, these things were all servile and beneath the dignity of women. To the eyes of the Indian, they were her just and equitable apportionment of the tasks of their nomadic life.

While the Indian woman was doing all the menial tasks above mentioned, was the Indian man idle? Far from it. His the task of securing the game, and any man who did not procure provisions for his family was soon socially ostracized. With proverbial Indian charity, the other men in the tribe did not see the women and children suffer from lack of food, but the shiftless husband was given nothing. In addition to procuring food, the husband must hold himself in readiness at all times to repel attacks from enemies, his war pony must ever be in readiness, his bow and arrows always in trim.

With these facts in mind, it will readily be understood that when the government took over the protectorate of the Indian, supplied him with provisions for the asking, the occupation of the Indian husband was gone, while that of the Indian wife remained. It was impossible for the savage mind to grasp the sudden change, and consequently the Indian husband went on in the same old rut; and the Indian wife did the same.

Let eastern philanthropists give the Indian man credit for the fact that he was willing and ready at all times to lay down his life in defence of his family, and cease bewailing the fact that the Indian woman was a slave—a condition that was vouchsafed her by primitive conditions.

Nuptial Customs

Indian marriage customs furnish an interesting chapter in Indian social life. A volume might be written on this topic without exhausting the subject. Only such salient points will be touched upon as will serve to present a picture of Indian life.

The Indian girl of marriageable age, that is, about sixteen, was looked upon by her father as so much negotiable asset, to be converted into increment when the proper buyer appeared. The girl herself was not consulted with regard to her personal choice, and love affairs were unknown. That statement, though, is subject to some modification.

If an Indian girl took a liking to a certain eligible young man, like her civilized sister, she had means of making that fact known. If a certain young man should arise some morning and find a toothsome venison pastry reposing in mute appeal before his tepee, he were a dullard indeed, did he not guess from whence the offering came and translate it into a wish to supply similar morsels for his palate through life. Generally he "tumbled," to use a westernism, and immediately made such advances to the young lady's father as would lead to negotiations toward marriage.

These negotiations usually consisted in the proffer of so many ponies in exchange for the young lady's hand, though other articles of value, such as canoes, buffalo robes, dogs, fishing tackle, fire-arms, etc., were often considered. It is curious to note in this connection that whatever the medium of exchange, the value was based upon the pony.

The father of several eligible daughters considered himself a savage Crœsus, and, indeed, he occupied such a position in the tribe, for when his brood was disposed of, he generally found himself in possession of practically all the wealth of the younger portion of the tribe.

The Potlatch

There was practically no marriage ceremony, although the father of the bride usually gave a "potlatch" to celebrate the

nuptials. This "potlatch" deserves especial notice, as it occurs in various phases of Indian life. If a man's son kills an enemy in battle, or in times of peace if he slays a bear, if any good luck befall a man, if anything out of the ordinary happens, he gives a "potlatch" to which all the tribe is invited. A "potlatch" is a feast in which eating, singing, dancing, story telling, gambling are indulged in for days at a time or until all the food obtainable is exhausted. So when a father had disposed of a daughter to advantage, he generally called in all his tribesmen and dined them.

After the "potlatch", the young people betook themselves to the residence of the groom's parents and went to housekeeping in a tepee prepared for them. From that time the bride was reckoned with the groom's tribe. Her dowry consisted only of the things she herself had accumulated, such as bedding, robes, tepees, cooking utensils, and her personal herd of ponies. Sometimes this last consisted of only one or two, her riding pony and her pack-animal.

Plural Wives

Polygamy was permitted, but it was by no means common. Only elderly men, possessed of a competence, were prone to take more than one wife. It must be understood that a man was expected to provide comfortably for his women folk, and if he possessed a plethora of them, he could not do this, hence he was perforce obliged to content himself with only one. It may be added that where there were several wives in the family, they resided together harmoniously; there was no dissension or strife for precedence. Each had her allotted task and performed it uncomplainingly.

Divorce

Divorce was common, and without the intervention of any court. If a man became tired of his wife, he put her away without consulting the advice or opinion of any person, nor did he have to assign any reason for his action. He was, however, in duty bound to provide for her until she found another husband, which, I will add, she did quite promptly. It is rather interesting to note that divorce always came from the side of the husband, never the reverse. There were times when a woman, dissatisfied with her lot, decamped with another man, but for the woman deliberately to divorce her husband was unknown.

Elopement was a crime and the punishment fell most heavily upon the woman. In many instances she was executed, though there might be mitigating circumstances, as for instance, failure to provide, that would modify the sentence materially. The Lothario, if caught, was generally rendered incapable of procreation, if poor; if wealthy, he could buy his freedom.

There were a few rare instances of where a man sold his wife. If she very much admired another man and he was willing to pay the price, the exchange was made and all parties to the transaction were happy—the seller in possession of a new herd of ponies, the buyer in possession of the woman of his choice, the woman herself in possession of a new man. What could be more equitable?

The Treatment of Children

When quite a small boy, I read with a great deal of horror a book which told of how the Indian parents mistreated their children. I suppose I grew up with a fixed idea of the inhumanity of Indian parents. I had dreams of how they bound them to trees and hurled hatchets at them to make them brave; thrust their feet into burning coals to teach them fortitude; cast them into roaring torrents to teach them how to swim; and divers and sundry kindred indignities.

If you, my dear readers, are possessed of similar notions, the facts unadorned will doubtless afford you a great deal of pleasure. There is no more kind and indulgent parent than the Indian parent. There is no more obedient and tractable child than the Indian child. I am not now talking from cursory investigation, but from over twenty years' experience among them. In all those years I never saw an Indian father correct his child either by word or blow, nor did I ever see an Indian child that merited correction. Obedience, with them, is a cardinal principle. Their very life demands it. Not only does the Indian father not correct his children, but in all things he makes a com-

panion of them, a lesson that civilized parents would do well to heed. If he goes hunting, his sons go also; if he fishes on the river, his sons fish with him. If he rides forth after stock, his sons keep him company. Where you see one, there you see the other.

It is true that their mode of life demands that the child be taught to ride almost from the cradle. I have seen youngsters of less than three years strapped to some gentle old pony, jogging along the road, ofttimes asleep. It is true that the children are inured to hardships—their mode of life demands that they should be. As the father treats his sons, so does the mother treat her daughters. They are inducted into the mysteries of camp life at a surprisingly early age. Girls of a very tender age may be seen pounding camas, dressing skins, jerking venison, performing the various duties of their outdoor existence.

In the children themselves, reverence for elders and superiors is a cardinal principle. Every old man is either "father" or "uncle," and their universal request is, "Teach me." They recognize that in age there is wisdom of their manner of life, and from age they must learn. Many times I have seen groups of children seated about the knees of some sage of ancient mien listening intently to the sagas of the Indian people as they fell from his lips.

Treatment of Injuries of the Pleura*

Surgical and Traumatic

By J. S. DEAN, M. D., Wheatland, Iowa

IN considering the treatment of cases classed under this heading, we have some conditions to meet not associated with wounds and abscesses in other parts of the body. All surgical wounds of the pleura are made for the purpose of draining effusions or of removal of adhesions or foreign bodies, pathological or otherwise.

In this paper we have included in the title traumatic injuries, because all traumatic injuries cause conditions parallel to those produced by surgical procedure, except that a large percentage of cases requiring surgical interference with the continuity of the pleura are septic in character, while cases of accidental trauma often leave the pleura free from infection or only fill the pleural space with an aseptic effusion of blood or simply produce a noninfected pneumothorax.

If these noninfected collections are present, then the treatment is as short and terse as the expression, "Leave it alone." If the accumulation from traumatic injury gives evidence of infection, viz., rise of temperature, sweats, and hectic, or if the opening into the pleural space is so large as to admit a continuous flow of air which will pretty surely lead to infection, then the case should be dealt with in the same manner as wounds produced surgically.

In considering the treatment of open wounds of the pleura from the present-day standpoint of asepsis and antisepsis, we have some conditions to meet that are not associated with the treatment of open wounds in other regions. In treating open wounds and accumulations of morbid material in other parts of the body than the pleural space, we have only to consider dependent drainage, antispesis or asepsis and careful sterile dressing to prevent infection by entrance of air.

In pleural injuries, however, we have to consider: (1) Collapse of the lung as soon as free opening is made into the pleural space. (2) Constant entrance of air during inspiration, with its almost constant result of keeping up infection or of introducing mixed infection when the contents of the pleural space were sterile at the time of operation. (3) The return of pus or other detritus to the pleural space after its exit, by the suction through the wound on inspiration. (4) Expansion of the collapsed lung completely,

*Read before the Clinton County (Ia.) Medical Association, Sept. 7, 1910.

without which the desired result cannot be obtained, be the pleural space aseptic or septic.

Essentials of Treatment of Open Wounds

Going back again to the essentials of treatment of open wounds, namely, (1) dependent drainage, (2) asepsis, (3) measures of whatever character to cause the cavity or opening to close from the bottom outward, (4) preventing the entrance of air that may be infected, and then applying them to wounds of the pleura, we conclude:

1. That dependent drainage can be obtained in pleural effusions and pleural injuries as elsewhere. (2) The production of asepsis or antisepsis in pleural conditions cannot be obtained unless some device can be used to prevent entrance of air into the pleural space during respiration. (3) The closing of the cavity cannot be attained unless the lung can be expanded, and if adhesions are to be avoided, this must be caused with maximum speed and without mechanical or other interference with the lung.

The prevention of entrance of air, reinfection by sucking of discharge back into the pleural space, expansion of the collapsed lung, and a dressing that will remain in place under normal and abnormal chest movement and especially during the effort of coughing, have taxed the skill of surgeons since the first operation for the removal of pleural effusions was performed; and I think all thoughtful physicians and surgeons will acknowledge that the reason for failure to close pleural abscess cavities and the large number of permanent fistulas reported is the difficulty in attaining the conditions enumerated.

Consequently, the conclusion must be that, in order to treat wounds of the pleura consequent to pathological conditions within the pleural space with the same accuracy as we treat wounds in other regions, we must in addition to conditions met with in other localities meet the following requirements:

1. Cause rapid expansion of the lung for two reasons, (*a*) to prevent adhesions between lung and parietal pleura, and (*b*) to close the abscess cavity. (2) To prevent entrance of air into the pleura on inspiration and also to provide perfect drainage on expiration—for this fact is patent, that under no condition, natural or physiological, can we obtain drainage except on expiration. (3) If we can prevent entrance of air on inspiration, we also prevent reentrance of expelled discharge within the pleural space. (4) After two years of study and experiment, we are prepared to discuss, later in this paper, the influence of adhesions in preventing closure.

Anatomical and Physiological Points

To discuss properly the points above enumerated, we find it necessary to go back and discuss some points in the physiology of respiration and of the anatomy of the lung. Dr. Robert Fingerstadt says:

"The lungs are enclosed in air-tight cavities; between them and the thoracic wall or the organs contained in the thorax there is no air. Since the lungs are hollow sacs with elastic and easily distensible walls, it is obvious that they must dilate every time the thorax is expanded and must become smaller every time it is contracted. Since, further, the lungs are in open communication with the external air by the respiratory passages, it follows that in the former event air must be sucked into the lungs and in the latter it must be driven out."

The word "sucked," which he uses, I must confess, is an unfortunate expression, as this is only true on forced inspiration. In normal respiration the air simply flows in as water runs down hill, and it is only under forced inspiration or when breathing at high altitudes which really causes forced inspiration that air is actually sucked into the lung, that is, enters with more force and rapidity than would occur in the movement of air currents seeking equal atmospheric pressure.

Dr. Fingerstadt continues:

"Following this, it has been proven by various experiments that intrathoracic pressure, that is, between lung and chest-wall and within the pleural space, is negative for normal expiratory position, 5 to 6 mm. Hg; for ordinary inspiration, in the neighborhood of 8 to 9 mm. Hg; and for deepest inspiration, 30 mm. Hg." Do not mistake. This means relative negative mercurial pressure,

not atmospheric pressure, as the pleural space is void of air.

From these experiments some have advanced the idea that negative pressure is necessary to cause expansion of collapsed lung. Perhaps this is theoretically true, but every surgeon knows that practically it is not true. Heavy dressings, the use of the constricted tube, and the Wolff's bottle method, have caused expansion in thousands of acutely collapsed lungs. Although these methods are slow, and oftentimes because of their slow action permit adhesions that delay or prevent closure of the infected space, nevertheless, these inadequate methods have accomplished the result frequently enough to prove positively that all that is necessary to cause expansion of collapsed lung is to cause a modified or relative negative air pressure, as compared with intra-lung pressure, that is, by way of bronchi and air-vesicles. The rate of expansion will depend upon the depth of inspiration and the perfection of the device used to close the pleural opening during inspiration.

Methods of Expanding Collapsed Lung

Many devices have been used to cause expansion of a collapsed lung, among which may be mentioned sealing of the wound, as advanced by Dr. Howard, U. S. A., 1864, during the War of the Rebellion. It failed, of course, because drainage was not provided. Heavy dressings were followed by moderate success. Blowing through a constricted tube and the Wolff's bottle method were followed by better results. But none of these devices met the need for short drainage tube and of preventing the reintroduction of the escaped discharge into the pleural space.

Later came the rubber dam around the drainage tube and putting the distal end of the tube under water. Attaching a Pulitzer air-bag to the end of the tube and permitting drainage into the bag or tube under suction has also been used.

Dr. Bryant's method was the use of a specially constructed syringe so arranged, with a two-way cut-off, that accumulated discharge can be disposed of without admitting air to the pleural space. This device necessitates strapping close to the wound. A great objection, in many cases, is the irritability of the skin; the rubber-ring dam has the same objection; and all the suction devices have the objection of requiring constant watching and the impossibility of maintaining in position without using a drainage tube projecting into the pleural space. Finally, they are not automatic, and any device to be just right must work with the same automatic regularity as inspiration to accomplish the two necessities, perfect drainage during expiration and expansive influence during inspiration; and, further, not only to prevent entrance of air, but prevent return of expelled discharge.

Still other devices for aspiration, of various patterns, have been devised upon the following general plan by Langier, Dieulafoy, Potain, Laurens, Walker, and Kenton and Pool.

The use of a tube, the stem of the tube entering the pleural space, one arm being attached by rubber tubing to the water supply and another tube attached to the second arm of the tube and leading to a receiving receptacle, the effect of running water from the tap through the tube inducing a negative pressure and at the same time aiding drainage. This device does not permit the patient to be ambulatory in any degree, and keeps a negative pressure within the pleural space constantly both during inspiration and expiration.

The palpable cumbersomeness the impossibility of retaining the tube in place, the necessity of using a long tube projecting into the pleural space, the expense of operating it, and the fact of the constant negative pressure with it seems to me an attending danger which has prevented my using this device, but I have modified my shield so that this device may be used, thus doing away with the objection of long tube and maintaining in position. But expense, cumbersomeness and fixed position still remain as objections.

The Open-Wound Method

All authorities, so far as I can ascertain, say that if a pleural effusion is treated by the open-wound method, the pleura will become infected after operation in the great majority of cases, even if not infected previous to

operation, and advise not to open the pleura in tuberculous pleurisy because of the danger of mixed infection.

We are led to inquire why these conclusions are necessary, as we shall all acknowledge that all skilled surgeons open all cavities except the pleural space with impunity and rarely does mixed infection follow such procedures. Go over the subject as we please, study from every angle, and only one conclusion can be drawn: it must be due to difficulty in retaining dressings and the effect of respiratory movement in introducing infected air and reentrance of infected discharge after exit from the pleural space when these wounds are dressed and treated in the same manner as wounds communicating with closed cavities in other regions.

As we pointed out before, to make treatment of pleural wounds as safe as that of wounds opening into other closed cavities, we must find some device that will permit perfect drainage, prevent drawing of discharge back into the pleural space on inspiration, and at the same time cause expansion of the collapsed lung. This device and dressing also, to be as effective as dressings for other surgical conditions, must not irritate or macerate the tissues, but must promote granulation.

As to the tube employed in the older methods of treatment, and in fact in most devices, it was necessary to use a tube long enough to extend into the pleural space a short distance in order to obviate its kinking, which would cause it to slip out of the wound during the effort of respiration.

The comparatively large number of cases of permanent fistula and a longer list of protracted recoveries due to fistulous openings lead us to inquire why this result occurs so often. Why should the large diseased area recover and a small, often pencil-sized, opening remain, with no foreign body present and no pathological tissue there that cannot be removed.

Some Experiments on the Dog

In studying this question, we took a dog and dissected away all the soft structure down to the ribs and also carefully dissected windows through the intercostal muscles down to the pleura. Then the trachea was severed and a hard-rubber tube with a soft-rubber tube attachment was tied securely into the tracheal opening. The purposes of the experiments were two: first, to study the influences of adhesions in various positions on expansions of the lung and, second, the influence of long and short tubes in producing fistula.

First the lungs were fully expanded by forcing air into the same through the trachea tube. When the lungs were fully expanded, they were attached to the pleura at various levels and in various positions at the same level.

The results of the experiments showed that in the upper half of the lung, adhesions have little or no influence in preventing collapse of the lung after it is expanded or of expanding after it was collapsed; but when we came to the lower edge of the upper lobe, we found that, instead of the lung expanding in a right line from the base of the lung, and when the lung surface came in contact with the parietal pleura, the point was at rest as in the upper portions of the lobe; the edge after touching the parietal pleura slid downward a variable distance, depending on the force used in expansion. The middle lobe expanded in a right line to the parietal pleura, then filled downward to meet the lower lobe; but the upper border of the middle lobe would not rise upward to meet the lower edge of the upper lobe if this lower edge was held upward either by adhesion or a drainage tube projecting into the pleural space, but the lower edge would immediately fill the fissure if the adhesion was removed or the drainage tube was made equal in length to the exact thickness of the chest wall. What was true of the middle lobe was true of the lower lobe; expansion was outward and downward, never outward and upward. Thus we found that the fissure between the upper and middle lobes and the middle and lower lobes must be closed by expansion of lung outward and downward—never outward and upward.

If a fistula has formed, then it must be closed by freeing the adherent border of either the lower border of the upper or middle lobe or both—or by resecting the rib at the lowest point of contact of the lung to the parietal and diaphragmatic pleura and so

allowing the "fixed point" to move upward to permit the upper fixed border of the lower lobe to close the fissure between it and the middle lobe and in turn force the middle lobe upward to close the fissure between the middle and upper lobe.

From these experiments came the explanation of the difficulty, namely: When the drainage tube was allowed to project into the pleura with the trend of the projecting end inward and upward, as it always is by the usual methods; if the tube is in such position that the lower edge of the upper lobe is held upward a variable distance when it comes in contact with the parietal pleura and it is only a question of a few hours until an adhesion forms, and as the lower border cannot move downward and the upper border of the middle lobe cannot and will not move upward to close this deficiency, a fistula results.

The results of these experiments demonstrated the necessity of some device that will enable the physician to use a tube equal in length to the exact thickness of the chest-wall and maintain in position, and still comply with the other necessities of treatment. Devices have been invented having a rigid support to enter the opening in the chest-wall, but they have the objection of rigidity and inability to meet the trend of the incision without causing pressure or irritation of the surrounding tissues.

After many trials I succeeded in devising a simple method of attaching a flexible valve of oilsilk or light metal direct to the end of the ordinary drainage tube, and if so placed this will work automatically and synchronously with the respiratory movements. It can be made aseptic. With a little instrument devised for the purpose the valves can be made quickly by the attending physician. This is a necessity, as new valves must be used at each dressing. This valve meets the indication for: first, excluding air and expelling discharge from the pleural space; second, excluding air, which compels rapid expansion of the collapsed lung. This instrument is manufactured by Truax, Greene & Co., Chicago, Ill.

With the first case in which this valve was used, I had simply the drainage tube wound with iodoform gauze sufficient to fit closely enough in the opening in the chest wall to permit air from entering around the tube, and was compelled to use a tube projecting into the pleural space. Expansion of the lung was rapid, but the difficulty I have above called attention to caused an adhesion just above the drainage tube, resulting in a small fistula which would not close until I resected a small portion of rib at the lowest point of the pleural space and permitted the "fixed point" to move upward, after which it promptly closed.

In this case the valve was protected from interference from the overlying dressings by building up around the tube with gauze rings. This method, while in a measure successful, led to trouble from displacement, due to movement of the chest-wall, and resulting in interference with the valve and so defeating its purpose.

The Shield for the Valve

I then recognized the necessity for a shield for the valve, in addition to the other necessary instrument above outlined. First a little straight guide with a hook-end was devised to measure the thickness of the chest-wall, and lastly a flexible shield. This shield, made of aluminum or plated copper or silver, meets the following indications: First, to meet and neutralize the movement of the chest-wall in inspiration, when properly applied and under suitable bandage correctly adjusted. Second, it provides for a pivotal attachment of the drainage tube to meet the trend of the wound without a possibility of causing pressure or irritation, or maceration of tissue. Third, permits the use of a tube equal in length to the exact thickness of the chest-wall. Fourth, insures maintenance of the tube in perfect position. Fifth, the discharge drops away from the end of the tube as soon as expelled from the pleural space and cannot in any manner be drawn back into the pleural space.

Finally, in this manner the required conditions are met, viz.:

Rapid expansion of the lung; perfect drainage, preventing reentrance of discharge after expulsion from the pleural space; exclusion of air which may cause mixed infection; automatic action of the valve.

(The patient can hear the valve close with each inspiration and so can be informed as to the condition of drainage); nonirritation of tissues and a direct stimulation to granulation; avoidance of adhesion due to long tube; fixed position of the tube with any angle of the wound without irritation or pressure.

How to Use the Device

In using this device, at the time of operation have the tube (wound with iodoform gauze) and valve ready before beginning the operation. If possible, do not open the pleura until the ribs are resected and closure sutures are inserted, leaving an opening just large enough to admit the tube wound with gauze. In recent cases, now open the pleura and push the tube in place, allowing accumulation of whatever character to drain through it. In this manner the lung will expand as rapidly as the escape of the discharge will permit expansion and no air will enter into the pleura.

In old fibrinous cases and cases resulting from dry pleurisy, this procedure will not be possible; but in many of this class of cases, by damming the wound with gauze and by putting gauze rings around the examining finger and pushing close to the chest-wall while removing adhesions or fibrinous deposit, air can be excluded in many cases.

The question of removal of fibrinous deposit is open to discussion. Personally, I remove all deposit. The question of washing out the pleural space is also open to discussion. Personally, I treat the same as other wounds and abscess cavities. If there is no fibrinous deposit I do not irrigate. If there is, I often paint both parietal pleura and lung-pleura with the compound tincture of iodine and have never seen any bad results from it.

I have never had occasion to use the bismuth and vaselin treatment, as I have had no fistulas since the discovery of the method by Dr. Beck, the device and valve having been completed for my own use a short time before the announcement by Dr. Beck. It seems pertinent to me to enquire why there should be fistulas in the large majority of cases if competent diagnosis is made and early adequate surgical treatment is instituted.

The accompanying illustration shows my device in position. The method of applying is as follows;

1. To make the valve, use the best quality of oilsilk. The valves may be made in numbers by folding the oilsilk on itself a number of times and cutting with the punch furnished with each device.

2. To attach the valve, use fine silk thread and a round sewing needle. Place the valve on the end of the drainage tube and pass the needle through the valve just at the inner edge of the drainage tube and out through the wall of the tube, then up through the oilsilk exactly at the outer edge of the tube; tie over the silk with a square knot.

Showing Dr. Dean's apparatus

3. Insert the pin through one of the openings in the ears of the device and then through the drainage tube just enough below the valve, to leave the valve free from interference, and then through the opening in the second ear of the device.

4. Wrap the free end of the drainage tube with 5 percent iodoform gauze, to make it fit snugly into the chest-wall opening after insertion.

5. With the little guide measure the exact thickness of the chest-wall by passing the bent end of the guide through the opening in the chest-wall and pulling against the pleural surface, then marking on the guide at the surface of the skin; thus indicating the exact thickness of the chest-wall.

6. Now lay a pad of sterile gauze on the under side of the device, after cutting an opening to admit the tube, measure the length of the tube beyond the under surface of the gauze as indicated by the guide, and cut off the tube at that point.

7. Pass the straight end of the guide through the opening in the wing of the device, lift the valve and pass it through the drainage tube and so into the opening in the chest-wall, and push the drainage tube and attached shield into place.

8. Attach the elastic band to one of the hooks of the shield, pass around the body and attach to the hook on the opposite end of the shield. Shorten or lengthen the elastic strap, as required, by means of the slide buckle; making this strap just tight enough to maintain the shield in its proper position but not so tight as to give a sense of constriction.

9. Over all place gauze and cotton and a binder to hold in position. It is well to pin slightly tighter at the upper and lower edge of the wing of the shield than over the wing, as this method aids in maintaining in position.

The Woes of Mexico

By ROBERT GRAY, M. D., Pichucalco, Mexico

EDITORIAL NOTE.—Dr. Gray has resided in Mexico for many years, where he has lived and practised among the natives. He knows them intimately. He understands them. Few men are better equipped to diagnose the present "woes of Mexico," in which we are all so acutely interested at the present time. While Dr. Gray's article was written before the troops of the United States were sent to the Mexican boundary, it throws much light on the condition that apparently made this somewhat heroic remedy necessary.

Strange—that where Nature loved to trace,
As if for Gods, a dwelling place,
There man, enamour'd of distress,
Should mar it into wilderness.
—BYRON.

AMERICAN and Mexican strenuous relations, intensely strained by recent complications which distressingly blend with old scores, and are more or less aggravated by infamous contributions entitled "Barbarous Mexico," imposed upon publishers in the United States as a true portraiture of existing conditions in this republic, furnish a theme of startling importance and one that should have serious consideration in the United States.

Natives Inimical to American Industries

There are more than fifty thousand American citizens resident in Mexico, and more than a billion dollars of American gold are invested here, the security of which depends upon internal peace under the administration of a stable government.

The virulent demonstration against, and spirited attempts to attack, Americans in the leading centers of this country, by students—an element certainly representing a degree of intelligence far above the average—indicates an undercurrent of popular sentiment decidedly unpleasant for life and interests liable to become subject to its delirious caprice, were this freely unbridled; and the revolutionary hostility the existing government has been forced to quell by the strong military arm serves as a loud tocsin of warning that civil convulsions may enthrone a horrid reign of unsparing anarchy when the present genius of government and prosperity is no more at the helm of national guidance. And how much more may be expected of a man now past four-score years? The goading memory of the spoliation of

Mexico entailed by the former war with the United States still rankles in the Mexican mind—an irrepressible sentiment of dissatisfaction.

Some Causes of the Discontent

The Mexican government bid high for American capital and enterprise, to develop the prostrate and impoverished country, granting concessions and other inducements of an extraordinary character—the impetus that put a network of railroads over the face of the country, and established factories equal to those in Europe and the United States. The magnificent systems of railways, telegraphs and telephones that have thus been created as it were by the magic touch of the enchanter's wand enable the government to know almost instantly where revolution is brewing and to concentrate promptly the force necessary to control the turbulent element.

Naturally, there are Mexicans who do not pause to consider that such progress could never have been made by Mexico without a credit impossible to be obtained except by a strong and stable government, yet who imagine that all existing development should be the unencumbered property of the native people. Then, to aggravate this situation, there are many aggressive, irresponsible Americans, overbearing and abusive, who show their scornful contempt for the natives, demonstrating their feeling of superiority, not only in acts, but in words, insulting and domineering; men employed in many phases of the various industries, not owners of anything but their uncultured deportment and vulgar tongues; people unknown in the upper walks of society and officialdom of the Republic; men who are a disgrace to the American name.

The poor natives thus maltreated are sensitive and resentful in spirit, although apparently humble in their helpless slavery to circumstances. These are the productive bone and sinew of Mexico, but the very element that crafty leaders of sedition might inflame and employ to wreak havoc on Americans and their investments amid the chaos of anarchy that would follow in the wake of the wreck and ruin of the present inflexible authority. The students are of a class more rational and temperate, yet they never have reflected as to the possible consequences of their rashness, to themselves or their country. The poor insulted and abused Mexicans would be more inebriately insane were they once started on a career of rapine and devastation.

Such are the dormant embers of local peril smoldering in the tranquil ashes of submissive impotence—impotent for want of available opportunity—with which American life and property may have to reckon at short notice when the protecting authority that sways the destiny of state so auspiciously today is at an end. It would be a poor source of consolation to those thus exposed that the government of the United States would make a fearful settlement with the perpetrators of lawless outrage after the dread deeds were performed.

Restraining Influences Required

Something should be arranged in advance to modify the intolerable conduct of those irresponsible Americans, something in the nature of a practical admonition or whatever might be proper on the part of the government of the United States, which has no direct jurisdiction, but still holds some measure of restraining influence over its subjects in foreign lands, who perchance might heed an intimation that they are needlessly provoking an embarrassing complication. Americans here may aid immensely in turning from themselves and theirs an avalanche of vengeance, should such terrible day dawn upon them, but which neither is to be expected or possible while there is a strong, respected government in control.

The situation is one that vitally interests Americans at home, whose tranquility and prosperity might be injuriously disturbed by a Mexican revolution gaining strong headway; for the massacre of their countrymen here and the destruction of their property could not be patiently ignored. And any intelligent American can well imagine the cost of redress.

The government of the United States should inexorably require the peaceful formation of a government to succeed the present one, and protect it with powerful moral force

against revolutionary disturbance. If those prone to revolution know in advance that the United States will permit no lawless move against the peaceful authority here, the attempts to destroy the government here will not be made.

American Sympathy Basely Solicited

Americans and Mexicans were guessing wildly at the motive actuating the costly preparation of "Barbarous Mexico" for publication, even imagining that some conspiring syndicate in the United States thus designed to involve Mexico in trouble with the United States, on the score of the reputed slavery established and maintained. It was supposed that American investors were aiding and abetting this crime against a nation to benefit their interests, paying both the American and Mexican governments liberally for their respective services in negotiating for them the mastery over the laboring peon class held in abject slavery, picturing the conditions in colors more abhorrent to humane sentiment than African slavery ever had been in the United States, and almost as revolting as was the lot of the Cuban pacificos in their concentrated encampments.

The prospective revolutionary patriots knew that the popular sentiment in the United States had freed the negroes and liberated the Cubans by force of arms. So they fondly expected to create a strength of sympathy in their own favor in a struggle with the "despotic and enslaving" government they represented Mexico to be groaning under, to a degree at least to secure to themselves the moral support of the great majority of the people, and ultimate recognition by the government, after some successful campaigning. This they probably anticipated would be easy of attainment, with the help of the federal army they counted on as a certainty at the very inception of the revolt. And there is now no doubt that they believed that twelve Mexican states would join them at once, almost in mass.

It was these men who furnished the skeleton outline of "Barbarous Mexico" to those who dressed up and inflated the preposterous incidents and circumstances, and paid the expense outside of those defrayed by the publishing houses that gave them to the light of day. It may be possible, of course, that the contributors were duped to accept these stories as the literal truth and that thus the publishers were likewise deluded. At any rate, the enterprise was a brilliant success to the point of what the publication of infamous falsehood could accomplish.

The Mexican Government

Falsehoods spread about this government have no doubt made unfavorable impressions among the people of the United States, maybe to such an extent even as to create a considerable measure of undue sympathy for the revolutionary movement. The present regimen was inaugurated when the country was a complete revolutionary wreck, with only a few leagues of railway, without factories, with no systematic agriculture, no organized commerce and no stable credit, and with the highways and byways teeming with bandits.

Today there are in Mexico thousands of miles of railways, hundreds of factories, ample agriculture, incredible mining wealth, gilt-edged credit, no bandits, while an extensively, well-planned and formidably designed revolution has been put to rest with seeming little effort, the hostile array begin so impotent in warlike preparations and feeble in numbers as to be able to offer no semblance of well-contested battle.*

These facts should satisfy the people of the United States that the existing government has been not only the resurrection and the life of Mexico in the past, but is its present salvation—an utterly impossible task for an incompetent and vacillating administration. And these are the reasons why the government in power has been continued, term after term; the progressive Mexicans, whether friendly to it or not, well knowing that no other prospective authority would give them security against the ravages of revolution. Naturally all the influence that foreigners could exercise was brought to bear to maintain such a stable government in power.

But the government of Mexico is no more despotic than that of the United States, and

*This paper was written before the development of the present Mexican revolution, in which we of the United States are so much interested.

has a reputation of tyranny only because the loud railers against the President, bandits and professional revolutionists, can not commit depredations as they please.

In this vast region where I make my home we do not know that there is in existence any form of government, save when some crime calls the authorities into this rural district, or when the time comes for collecting taxes. There is no soldier, rural guard or policeman within a radius of twenty-five miles from where I write—the most peaceful, orderly domain on the Continent. Not one revolutionist appeared and no arrest was made; and while there are here thousands and thousands of the class that seditious leaders count upon to rise against the government, not one soldier has been sent in here to overawe any prospective uprising in this locality.

There are fifty such *imaginary* "revolutionists" for the one whom Madero would regard as being loyal to the government. And what is here affirmed from personal knowledge was the condition for a hundred miles in every direction from this place—neither rebels nor soldiers in such a vast territory.

The same is true all over the republic, save in the few places where the standard of revolt was raised but without attracting the cooperation of the local inhabitants, the disturbers of the peace being mere freebooters, out for plunder, save now and then some deluded leader who may have truly believed that the people of Mexico wanted the proposed revolution and would flock to its encampment almost to a man. Many foreigners and quite a goodly percentage of Mexicans had some suspicion that the army might abandon the colors of the government—which would have been embarrassing—but this want of confidence was unjustified, for the faithfulness of the troops was admirable.

It is now almost an established certainty that we shall have prosperity and peace to the end of the new administration, as the vigor of the President justifies the hope that he will have ample natural force to sustain him in active service ten years longer. Possibly, meanwhile, influences may be so wisely employed as to avert armed violence after Diaz retires from the helm of the ship of state he so effectively steers.

The Yaqui and Maya Indians

Americans have little right to criticise Mexico or any other country about cruelty to savage tribes of Indians, if they will but reflect a little on the fate they have meted out to the native red man. The atrocious ravages of the Comanches were perpetrated for many years, in the lifetime of many people now living, and were only terminated since I was comparatively an old man. The Yaquis and Mayas deserve all the severe treatment that the government of the United States was forced to adopt for the annihilation of the Comanches—"subjugation" would be too mild a term. Mexico has been more patient and forbearing with her blood-thirsty wards; but it has found, by sad experience, that there is no pacific remedy that can lure them to be peaceable, law-abiding people.

In the State of Sonora, where the Yaquis have their reservation or, more properly, their all but impregnable refuge, there are rich mineral deposits that lure American prospectors into their savage power.

Now please listen to this. There are millions of big red ants that live and breed in the ground, the most voracious known to man. Some who have been so unfortunate as to become prisoners of the Yaquis have been securely bound, nude, near a nest of these gruesome ants. Not a minute elapses before their skin is broken and their flesh is wrenched off, little by little, by these insects, and carried into the hive; It is the most excruciating and long-lingering death ever suffered by man. And thus the slow and relentless process continues until nothing remains but the clean and polished frame-work of bone. And American periodicals have their pages prostituted with the accusations that the Mexican government deals barbarously with such fiends in human shape!

Mexican Elections

I am the physician of the big American Rubber Plantations and of some native ones in this belt, and was the physician of hundreds of families, at one time and another,

before there were any rubber plantations. Hence I am intimately acquainted with hundreds of voters, having resided in this Department during every election held that made Diaz president. And I personally know that there were never Federal, State nor municipal marshals at the polling places, nor other person challenging voters or striving to influence any voter. All this notwithstanding, at the late election Madero received barely two percent of the votes cast, although every vote polled might have been for him had each voter possessed the will so to vote. But I know a number of men not in favor of Diaz's government who voted for him simply because they have no faith that a new administration, with an untried and inexperienced president, would assure them the same protection in person and property they have so long enjoyed.

As to Mexican "Slavery"

Slavery in any form or under any condition, to my sensibility, is the most odious enthrallment that has ever been imposed on mankind. I have reason to hate slavery with all the intensity of my ardent southern nature—the relentless curse that estranged me from my native land, transforming the old homestead to a desolate waste, putting all my family in the churchyard solitude or amid the intermingling dust of the battle-storm.

But the enslavement so industriously denounced does not exist today. Mexican peonage is not slavery. All labor in Mexico is paid for, the money going to those who perform it. On plantations the wages, which are paid weekly on some, monthly on other plantations, with rations, are from eight to fifteen dollars per month; besides free medical attendance on these American places and on some Mexican ones. On the American place where I am writing, the laboring people have more than five thousand bushels of corn and plenty of beans, pumpkins and bananas, which they were permitted to plant, although their regular ration of corn and beans is all, and more, than they can consume. Also they have hogs, turkeys and chicken. And the peons on the native places have practically the same ample provision for their needs

Any man who wants to change his employer may go to the local authority and get an order to his employer to liquidate him; and, in case he is in debt, he takes the liquidation to his proposed employer, who sends the money to pay his debt. Then he moves to his new employment. If he does not owe anything, he moves at his pleasure.

A large percent of Mexican farm laborers make it the grand study and enterprise of their lives to run into debt, with no dream of ever paying. Some never get into debt, and gradually save money to buy themselves little homes, thus becoming enfranchised citizens. Any laborer may thus gain the franchise; and those who never make the effort are unworthy of it, there being no country in the world where it is so easy for the very poor to economize and own homes when the will exists. But the happy-go-lucky shiftless debtors would rather buy a quart of rum Saturday nights than to own homes and raise families in some semblance of decency.

This is all there is to the great hue and cry about Mexican slavery. The miserable houses and rag-tag appearance of the people at work might naturally impress a stranger with the suspicion of servile bondage; but very close duplicate scenes may be found among the freeholders, the climate being so generous to the poor children of Nature. I own no undershirt nor overcoat, and have no clothing other than of cotton drill; nor do I sleep under a sheet fifty times in a year. Few poor people in the United States, depending exclusively on their labor, are as well off, physically, as these indolent Mexicans—applying this term to the necessaries of life and the requirements of toil to possess them.

The Natives the Victims of Their Vices

The scourging curse of these native Mexicans is the bane of their consuming vices, that put half of them into premature graves, and render most of the other half the easy prey of the ever-prevalent diseases. At the present rate of destructive race decline, scarcely more than another century will be required to exterminate this interesting native population—interesting, because they are the mysterious progeny of recordless

Time; a people who sprang up among the graves of dead and nameless nations, so long ago that no fragment of perished traditions remains to hint whence they came or how long they were here, the hapless slaves of cruel masters, long before the gold-thirsty Spaniards came to intensify their thraldom of unmerciful servitude.

The majority of the children eat dirt and die before they attain the age of puberty. Nearly all the male population above ten years drink new rum, and men and women all use strong Mexican leaf tobacco excessively. But for their vices, the people would not be sickly. The children are healthy till they get among the dirt-eating classes. I have cured many by convincing them that I should put them in the graveyard, with the dead, if they tasted dirt again; and that I could tell by a glance at their eyes if they had eaten but the smallest portion. The positive cures have been about ninety percent. They grow healthy and plump in a short time after abandoning the vice. But the class, as a whole, is a hopeless proposition, and it might become an exceedingly dangerous one if once it arrayed itself against the propertied classes.

These people are in a high degree imitative, and learn delicately complicated industries with surprising promptitude. They become expert weavers of textile fabrics, and are unsurpassed adepts in fancy needle-work; they also would do good drawing and painting, with any liberal show of opportunity, as numerous examples clearly demonstrate. But their memories are defective. Their thinking and meditating faculties have been dwarfed and blighted by the long dark ages of slavery that have wrought their pathetic destiny.

One could write on and on indefinitely about these poor, degraded specimens of hapless humanity, their lost birthright, their aimlessly hopeless existence, their woeful tragedy of moral and physical possibility, and the waste, howling desolation of their immortal heritage, if this must be measured by the strict rule and square of Christianity. They are Catholics by hereditary bequest, and baptize their children; but yet they loathe the church and believe in none of its precepts or promises. They remember and cherish the wrongs their ancestors suffered at the hands of the priesthood, and will never forgive them nor love the church.

American Homes in Mexico

Thousands and thousands of doctors have written me about the practice of medicine, homes and investments in Mexico; and I take it for granted that many people not of the profession would like to know the truth about this country, as a place of residence or investment.

My more than forty-five years' residence here has given me something more than a mere superficial view of the inward mysteries and enchanting allurements of the "Magic Realm of Mexico," which I cheerfully share with the people of my native land, that I shall nevermore see.

Mexico is shrouded in a gossamer halo of mystery so intense and luring as to startle and hold spellbound anyone who presumes to meditate her undiscoverable marvels in absorbing thoughtfulness. What she was ere the Toltec and Aztec nomads first roamed over the throbbing dust of the dead and nameless nations that perished when "The Lost Atlantis" was engulfed, is a maddening theme, because the silent solitude that hovered over the tomb of the dead world lent no glint of guiding light that could live through the long and dismal night of recordless centuries, to illuminate the research of this pulsating age of enlightened progress. Goading imagination recoils from the baffling quest.

Putting the vague and unreliable scraps of Egyptian tradition, that have been transmitted in fragmentary remnants of Plato's reminiscences of what he learned from Egyptian priests—practically librarians—about the existence and the disappearance of "The Lost Atlantis," with the indubitable evidence of the universal destruction of this continent, everywhere unmistakably visible, we may hesitatingly conjecture what transpired: that the shores of "The Lost Atlantis" repose beneath the surge of the mid-Atlantic flood; that the islands that loom above the restless Atlantic tide were mountain summits and lofty plateaus of tablelands of the engulfed realms of the continent,

that remained above the enthralling wave which swept over the more depressed belts of intervening land; and that the shock was so horribly annihilating that all life was blotted out and the cities wrecked, on all the continent that was not hurled down into the watery tomb; and thus came the puzzling ruins scattered far and wide, from the Mexican Gulf and the Atlantic to the Arctic Circle: "The tombs of dead and nameless nations."

Such ruins are to be seen, in not remote distances, from the Gulf marshes to the highlands of Mexico, almost anywhere one may turn to seek them; and they tell a mournful story, in their silent eloquence, of hopes that have fled and loves that are dead:

> Here, where nameless solitude
> The very atmosphere has imbued
> With a solemnity so profound
> That all seems holy, consecrated ground;
> Whose monumental shrines, heap'd and pent,
> And tumbl'd temples, with their arches rent,
> And marble palaces crumbling into dust,
> All Retribution's trophies, accurst.

This dreamy mysticism is ample to entrance the prying mind and sink into the feeling depths of the polished bosom of any investigating son of science, whose intrepid steps may tread these weird solitudes amid the purple gloom of lugubrious midnight, beneath the pale gray starlight of the tropical sky, the most splendid constellation that ever beams above accurst mankind.

Turn over the leaves of history till a pensive eye lingers with longing fondness on the pathetic story of this fair land of the sun, from the advent of Cortez to the quelling of the recent revolution, above the graves of whose dead the sods of the valley are not yet dry, nor those red, weeping eyes of the plaintive bereaved, and the most interesting stage on earth will gradually become uncurtained to view.

The Past and the Present

How deplorable that the dread, dark curse of the past should yet enthrall all this natural loveliness, and blight and mar the fair domain till it should become the unreached Paradise of despair; for it has the attributes of a Paradise to mock and outrival the fabled Eden of days of yore. Were conditions here what they are in Florida or southern California, as to ingress of settlers from abroad, those winter Edens in the United States could never approximate a remote comparison with the possibilities of making a perpetual Paradise, immune from frost, every product of those favored haunts of fickle summer in December and January flourishing in dark luxuriance here, with every tropical exotic no one would dream of planting there. Although the torrid sun flings intense vertical rays over the earth, the heat is never so oppressive as it is anywhere in the United States in July and August, seldom passing ninety in the shade, any one being able to work all day; while the nights are always refreshing.

The land is rich, heavily timbered, and exceedingly cheap, compared with inferior quality in the cold belts of the United States. Nowhere on earth are there such vast stretches of virgin soil invitingly promising to poor families, dependent on personal labor, to make an easy and comfortable living; lands that might be bought for five to ten dollars an acre. But there is no market for any product other than rubber, cacao and live stock, for want of transportation, garden truck having no value other than for home consumption that makes food for the family all the year, the chickens and eggs that may be sold affording money to buy other indispensables while the rubber and cacao are developing. There are no roads but bridle trails, often almost impassible, even dangerous.

American Women Dissatisfied in Mexico

But the great and burning question for Americans to consider is that they are unpopular with a large class of Mexicans; and that American women are never satisfied here. They dislike the people and cannot conceal their antipathy; they cannot tolerate Mexican house servants; they do not understand the language and will not try to learn it; and they strive to pass half their time visiting their families in the United States, keeping their husbands struggling to provide funds to meet such extraneous expenses. It seems to me that they cannot resist the impelling influences that actuates them to cherish sentiments of discontent. Their homesickness seems to be a malady they have

no will-power to resist. Everything is strangely unnatural to them. They pine for the social pleasure of their native land.

For these reasons it were better that American families do not come here, unless in a large colony; and there is an objection to this, founded on American social exclusiveness, that provokes unpopularity among the better classes of the natives.

Single Americans may do well by marrying native women and blending their destiny with that of the country. But if men of families desire to create productive agricultural enterprises they should come without their families—positively without the female members. A number of such men might combine and buy and develop a joint-interest plantation, the same as the big rubber places here were made and are operated, the families of the owners never having been here, the men coming but once a year for a month or so, while the operations are conducted by a foreign manager and native foreman. But one of such combine needs must remain here much time.

Mexican Investments

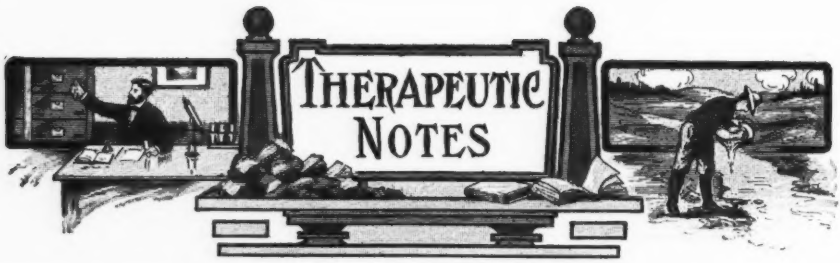
Improved native places may be bought on liberal terms that would pay good dividends from the start. The place where I write was thus bought by three or four Americans and will pay for itself under their management twice before the last payment is due. None of them remained a month, at the start, and but one has come on short yearly trips since. Another big place, of a million rubber trees, was made from wild land, by two American brothers-in-law, the single one staying most of the time till the last trees were three years old; but he has been away nearly a year.

Have nothing to do either with plantation stock or land shares of any such as may be offered for sale in the United States, as all such investments will prove a total loss. See the goods before you buy anything in Mexico, whether from native or American exploiters.

Rubber at twenty-five cents a pound, gold, would pay more per acre than any farm product, planted on a large scale, pays in the United States, three crops per year being gathered under the American process. Rubber is now one dollar a pound, gold, on the plantation, and has been worth more than twice as much in 1910; and is not likely to run below fifty cents in many years. Almost any native plantation may be bought, that would pay a dividend at once, probably cheaper than it would be made from wild land, counting the delay of seven years to attain the productive stage. Most such native places yield paying crops of cacao and have pastures for stock raising. There are dozens of such places in the great rubber and cacao belt; and wild land of equal quality by hundreds of thousands of acres.

It would be impossible for me to give any personal information beyond what is herein contained, as my time is occupied. But those who may desire to investigate would have no trouble about finding the great rubber and cacao belt. And I wish to repeat: do nothing without a thorough personal inspection before parting with any investment funds.

The grand imperative duty of the people of the United States is to make a wise effort to conciliate whatever unfriendly sentiment that may be prevalent in Mexico, if not for the hapless sake of hostile natives, then for the better security of Americans whose lives and destiny are inextricably blended with Mexican destiny. If the government and people of the United States would make a supreme effort they might materially modify if not absolutely counteract any probability of another revolutionary demonstration, now improbable during the administration of President Diaz.



COMBINED EFFECT OF ANESTHETIZING REMEDIES

A. Schoff, reports, in *Therapeutische Monatshefte* (Nov. 1910, p. 635), some experiments made on the ischiadicus of the frog and of the rabbit, at first with a mixture of cocaine, novocaine, tropacocaine and eucaine, then with a mixture of these remedies, together with strophanthin, adonidin, and periplocin, finally with mixtures of the substances of the cocaine group, also with morphine, strychnine and veratrine. [Talk about confusion of mixtures!—ACHARD.]

The experiments showed that the effect of a combination (two remedies of the cocaine group) is more intense than should be expected from the respective doses, and that a particularly severe or marked effect was obtained from combinations of cocaine with strophanthin or adonidin, and from combinations of cocaine with adrenalin.

ATROPINE IN DYSMENORRHEA

Drenkhahn in a German gynecological journal, reports a number of severe cases of dysmenorrhea, especially those of the spasmodic variety, which he has cured by introducing one milligram of atropine in one Cc. of water, introducing it within the cervix. If he had no speculum or syringe he would saturate a very small cotton wad and moisten this with a one-percent solution of atropine and press it far back against the posterior vault of the vagina. This simple measure has proven very effectual in many of his cases. He believes this is due to the fact that atropine paralyzes the auto-muscular action of the uterus and reduces its mechanical excitability. This was Shinder's theory after experimenting on animals.

In cases resulting from congestion alone, says Ellingwood (see *Therapeutist*, Feb., 1911) the atropine has a tendency to cure chronic cases satisfactorily. The use of mild sitz baths or hot vaginal injections when not contraindicated, prior to the use of the atropine, may conduce to its satisfactory treatment

ASCLEPIAS COMPARED WITH BRYONIA

"I have called attention," says the editor of *Ellingwood's Therapeutist*, "to the resemblance in the action of asclepias and bryonia in their effect upon serous membranes. I am convinced there is a great deal of resemblance. I think the bryonia acts upon the circulatory condition, while the asclepias influences more particularly local conditions, dependent upon the condition of the serous membrane itself. They can be well combined and in many cases it would be found that asclepias is preferable to the bryonia, but in the acute pulmonary cases, bryonia is superior, as its influence is wider, while in those cases in which the serous membranes themselves are alone involved, asclepias has its field."

THE MENACE OF THE RAT

The rat is certainly looming up as a destroyer of property and a potential destroyer of life. So says the *Medical Times*. Many million dollars' worth of grain and other food are eaten annually by them. The farmers of the Canadian wheat belts have become especially alarmed; the rats have reached Winnipeg, and radical measures for their extermination are being early discussed. In the Pacific Coast cities they bring on, at any time, a plague epidemic manyfold worse and

more deadly than fire and earthquake. In this connection, *The Evening Post* says:

"Traps, cats, poisons, and other methods of extermination are being tried. But will man be able to outwit this animal whose intelligence is equal to its aggressiveness? Trappers in particular have reason to deplore the rat's cunning. Who has not, after catching one, come to his trap, day after day, week after week, without finding another victim in it? Yet there is a way of tricking them Scatter dead leaves over the trap so they cannot see it, and the smell of the bait will lure them to sure death."

NUTRITIVE SUPPOSITORIES

Rectal feeding is very unsatisfactory and cannot supply sufficient nourishment to keep a patient alive; nevertheless, it often will tide him over such acute conditions as hemorrhage of the stomach, when absolute rest of the stomach is necessary.

The chief objections to nutrient enemata (abstract in *Merck's Archives*, Dec. 1910, p. 406) are their low caloric value, the inconvenience of administering them, and the necessity of first washing out the intestines. Even with all possible precautions, they are often not retained, because of their bulk. Frequently they will also lead to the formation of an excessive amount of gas and thus cause colic and tenesmus.

It would be almost impossible to give such patients any nourishment at all, were it not for the fact that Boas has found that sufficient dextrin, crystallized egg-albumin, salt, and cacao butter can be introduced in the form of suppositories for nutritive purposes. These suppositories are indicated where there is excessive irritability of the rectum, in carcinoma, volvulus, intussusception, and the like. The lack of water may be supplied by saline injections into the rectum or under the skin. Absorption usually requires from three to four hours.

THERAPY OF HEAT AND COLD

The Medical Era (Dec., 1910, p. 495) says that the cold-pack for an acute laryngitis or tonsillitis, maintained for an hour, or for two or three hours—according to the results obtained—often proves very helpful in checking the inflammation and in giving comfort to the patient. In some cases the cold is not well tolerated, especially in young children, and the use of a hot-pack gives very good results without the previous employment of cold, although, where it can be done, the cold should precede the heat for a short time.

An objection to the use of either the hot or cold wet-pack to the throat of a child is that it may tend to chill the surface as soon as the first effect is gone; also, that the clothing gets damp, and the child is in danger of "taking cold" from the use of the water.

While the danger from this latter source is greatly overestimated, it is still a fact that in the hands of the untrained attendant it is a real objection; but even under these conditions the application of the heat or cold may still be made by using a rubber water-bag, which offers a solution of this problem. It may contain either hot or cold water, and any temperature short of boiling water may be secured.

THE INTRAVENOUS AND SUBCUTANEOUS ADMINISTRATION OF SUGAR

The *Deutsch-Amerikanische Apotheker-Zeitung*, for February cites a German contemporary to the effect that intravenous and subcutaneous injections of grape-sugar are now administered unhesitatingly in desperate cases in which the stomach is incapable of serving tor the introduction of a sufficient amount of food. As much as 1,000 Cc. of a 5-percent solution are well borne intravenously, and may be repeated daily. It is necessary, of course, to use the purest quality of grape-sugar, dissolved in physiologic salt solution and sterilized.

It is well to begin the injections with a 2-percent solution, increasing the sugar-content gradually to 5, 7, and even 10 percent. Kausch recommends, in proper cases, the addition of from 4 to 8 drops of adrenalin to the solution when intended for intravenous administration.

It is of interest and importance to note that the patient can tolerate more grape-sugar in proportion as his nutrition diminished. One woman seriously ill with puer-

peral sepsis was saved by daily injections of 2900 Grams of a 10-percent solution. In this case, only 0.2 to 0.3 percent sugar was eliminated as such in the urine. It is possible to supply in this manner from 300 to 500 calories to the organism.

PERMANENCY OF DIGITALIS

When digitalis leaves, just gathered, are crushed and dialyzed, the colloids are removed, and the simple addition of glycerin and alcohol makes a preparation that retains its strength for years. This is proven by the tests made by Focke, the celebrated authority on digitalis, who found this dialysate—or digitalysatum as it is better known—of exactly the same strength during eight years after its manufacture. He also standardizes the preparation by physiological tests, so that any certain dose always is of the same therapeutic power. During all these eight years of its use in general practice, there has never been reported a single case of accumulation; which can not be truly said of the usual forms of digitalis and its derivatives, including even digalen.

Digitalysatum is well borne also by children, and is very prompt in its effects; though for emergency cases it is advisable to inject it subcutaneously or intravenously. Injection into the muscles is not attended by unnecessary pain, and abscess and infiltration do not result. For injection use, a normal salt solution is preferred, which is termed sterisol digitalysatum.

Digitalysatum has the full digitalis-action. Small dosage, accuracy, lack of toxicity in therapeutic doses, rapidity of action, together with the features already mentioned, are the advantages claimed for it.

QUASSIN

Compardon found that quassin in moderate doses increased the secretion of saliva, bile, urine and perhaps the milk. It aroused the action of the digestive muscular fiber, that of the uropoietic apparatus and of the bile-ducts, augmenting mucous secretion and facilitating the excretion of normal secretions. With the sick, as a bitter tonic it arouses the appetite, renews the forces and facilitates normal excretion, rendering defecation easier and hastening the expulsion of renal and hepatic calculi. In doses exceeding gram 0.15 it determines symptoms of intoxication, local and general, with nausea, vomiting, diarrhea, vertigo, febrile agitation, cramps and convulsions; remedied by chloral internally and chloroform externally.

CREOSOTE IN PULMONARY TUBERCULOSIS

Conrad Martin (reviewed in *Therap. Monatsh.*, Oct., 1910, p. 566) claims that creosote is a specific in pulmonary tuberculosis, and should be employed systematically at intervals, of from three to five weeks, with omissions of from three to nine weeks. Martin claims that the omission of creosote in the treatment of pulmonary tuberculosis is a serious error. He recommends especially creosotal, guaiacose, and guaiacol carbonate, the latter in the following formula: Guaiacol carbonate, balsam of Peru, myrrh, of each 2 Grams, to be made into 50 pills. Of these, 2 pills are to be taken three times a day, half an hour after meals.

ANTISEPTIC POWER OF ESSENTIAL OILS

Since the therapeutic value of the different essential oils depends more or less upon their antiseptic power, a research recently made by W. H. Martindale, and reported in the November number of *The Perfumery and Essential Oil Record* (London), is of special interest to physicians.

Dr. Martindale examined twenty-six different oils, by a modification of the Rideal-Walker test, to determine their "phenol coefficients," i. e., their antiseptic power as compared with phenol. Agar cultures of the bacillus coli communis were used as the test organisms.

The results are interesting, and rather unexpected. Oil of origanum heads the list with a phenol coefficient of 25.76 (in other words it is a little more more than one-fourth as strong an antiseptic as carbolic acid); next on the list are thymol and carvacrol (caraway-seed oil). Cinnamon oil is well down on the list, varying from 7.1 to 9.6,

according to variety and source, and the oil of cloves has a coefficient of 8.88 . Wintergreen oil has a coefficient of only 4.64, and the oil of eucalyptus globulus, so high in popular estimation, takes a still lower position with 3.55 Another point brought out in the research is that cinnamon oil does not owe its antiseptic power to cinnamic aldehyde, as the aldehyde gives a lower figure than an oil containing 52 percent of this constituent.

THE TREATMENT OF AFFECTIONS OF THE LOWER COLON

Ernst Rosenberg (reviewed in *Ther. Monatsh.*, Oct., 1910, p. 571) treats chronic catarrhs of the lower colon principally by dry applications of a mixture of tannin and magnesia or of sozoiodole zinc, xeroform, and so forth. These powders are insufflated by means of a long tube. The flushings which were formerly employed are not lauded by Rosenberg. In ulcerous conditions he recommends sponging with hydrogen peroxide followed by the application of solution of silver nitrate.

DIGIPURATUM—ANOTHER DIGITALIS PREPARATION

This is a new product, introduced by Knoll & Co., two years ago. Digipuratum is a depurated extract of digitalis leaves, diluted by the addition of sugar of milk as an excipient, physiologically standardized, thus being made equivalent in dosage to a superior quality of the leaf.

The dried drug is said to include 85 to 90 percent of inert or therapeutically undesirable substances, including a very small amount of digitonin, which may act as a gastrointestinal irritant; these substances are removed in the manufacture of digipuratum. There are accordingly left behind in the product all of the desirable digitalis glucosides, including digitoxin and digitalin, and the undesirable elements are excluded. The action is, therefore, the same as that of digitalis itself, though it is claimed that it is less liable to disturb the stomach. Digipuratum is soluble in alcohol and very dilute alkaline solutions, even as low as one part in one thousand of soda. The dose is a grain to a grain and a half. It is physiologically standardized on frogs according to the method of Gottlieb.

It is interesting to note that Hale, of the Hygienic Laboratory at Washington, in his examination of digitalin and its products, found digipuratum a very uniformly potent product.

A DISINFECTING WHITEWASH

Now that we are beginning to think about the spring clean-up, says the *Bulletin* of the Chicago Department of Health, a suggestion for a good cleansing and disinfecting wash for courts, area walls, stables, etc., is in order. For ordinary purposes the well-known lime-wash will be found excellent. It is prepared from freshly slaked lime as follows:

Take 1 ounce of the lime to 5 gallons of boiling water, adding as you stir, one teaspoon (level full, not heaping) of table salt. This will make a wash of proved germicidal power, killing most germs, effectually sealing them in when used on dry surfaces.

The United States Government formula for a whitewash, where in addition to the cleansing effect durability is desired,.

Slake half a bushel of lime with boiling water; cover for an hour; strain through a fine sieve and stir in a peck of salt dissolved in enough warm water to do the work thoroughly; boil three pounds of rice to a thin porridge and stir in while hot. Soak half a pound of glue in cold water for an hour, then bring to boiling point by setting the vessel in a pot of boiling water over the fire; stir into the lime mixture together with half a pound of Spanish whiting. Now, pour into this 5 gallons of hot water; stir for three minutes from the bottom; cover to exclude dust and let it alone for two days. Apply hot when you are ready to use it. A pint of the mixture will cover a square yard of the surface. This wash is used in and around army posts and forts, and is very durable, being second only in this respect to paint.

History of the Word Dosimetry

[The word "dosimetry" is used so frequently in these pages that it may be of interest to our readers to learn how it came into use. In America we have adopted more generally the word "alkalometry" to designate the use of the small, frequently repeated, "measured" doses of the alkaloids. The latter word was suggested by Dr. Epstein himself, who translates the article which follows from the *Repetoire Universel de Medicine Dosimetrique*, 1883.—ED.]

It is now twenty years since Prof. Burggraeve, then in the service of the Hospital of Ghent, began the experiment with the ideas of Dr. Mandt, which led him at last to that medical reformation with which his name will ever be associated. Prof. Burggraeve adopted at first the word "atomistic" as a characterization of this method and of his new medicaments. It was not till observations made later on and after the advice of many physisians, who found the word "atomistic" to have a too-close kinship with homeopathy, that he adopted the word "dosimetry," created all by himself as a name for this reformation.

This word then renders his ideas the best, "whether in respect to the exact and definite doses of the medicaments or also because of their adaptation to the nature and course of the disease," as he takes care to tell us himself. To preserve for our pharmacy the complete ownership of this word, which was then not to be found in any dictionary I thought it best to make a legal registry of this word in the Court of Commerce. The trademarks which I have deposited at that epoch, bear, as a superscription, the words, "*granules dosimetrique du docteur Burggraeve, preparês par Charles Chanteaud, Pharmacien du premier Classe*, à Paris, 54, rue des Francs-Bourgeois, medicaments dosimetriques, etc. [Dosimetric granules of Dr. Burggraeve, prepared by Charles Chanteaud Pharmacist of the first class in Paris, No. 54 of Francs-Bourgeois St., dosimetric medicaments, etc.]

Up to this time we have refused to vindicate before the courts the property of a word which had been assured us by legal registry. It seemed to be useless for us to pay more attention to our counterfeiters than does the public itself. But at present, as their number and audacity increases continually, we have decided to prosecute by all legal means all those who in the future will not hesitate to make use of the word "dosimetric" with the object of enhancing the value of their products.

CH. CHANTEAUD, Pharmacist.

ASEPTICIZING (UVIOLIZING) MILK BY ULTRAVIOLET RAYS

Prof. Seifert lately delivered a lecture on the subject of uviol milk, from which the following is an abstract.

The use of heat for sterilizing milk, according to Soxhlet, was to destroy the putrefactive and peptonizing saprophytic bacteria from the cow's dung, but it happened to strike also the most sensitive normal bacteria of the milk and which are just those that profect the milk against the proliferation and decomposing effects of the first-mentioned organisms. From this mistake arose the false ideal of an artificially made "germ-free" milk, and the criterion was the longer or shorter period of non-appearance

of souring. Hence there was no attempt to kill off the pathogenic germs, and much less so when it was noticed that sour milk had a laxative effect, this being taken as a sign of unwholesomeness.

In time, however, it was noticed that heat-sterilization, and especially pasteurizing, did not only not bring about freedom from germs, but rather led to the enriching of the milk with the above-mentioned hurtful bacteria, and that the killing off of any pathogenic bacteria present was not at all made sure. But eventually the value of the sour-milk ferments was realized.

Then it was found that the ultra-violet rays are capable of destroying the incitors of disease in man and in beast while leaving an at least sufficient number of the sour-milk ferments in the fluid. When the milk is made aseptic in this way by means of machinery and filled in sterilized bottles and carefully sealed, it will keep for two and three days because of the bactericidal effect on raw wholesome milk.—*Deut. Med. Wochenschr.*, 1910, p. 343; in *Pharm. Zentralh.*, 1910, p. 196.

HYPER- AND HYPOTHYROIDAL ACTION

Before the Societé de Biologie, at its session of May 22, 1909, Levi and Rothschild pointed out certain ophthalmic signs from which can be deduced the existence of either hyper or hypoactivity of the thyroid gland in the body. Some of the principal signs of hyperthyroidism are: exophthalmos, increased luster of the eyes, nystagmus, strong development of the eyebrows, continual winking with the eyelids or discoloration of the same. Signs of diminished activity of the thyroid are: deeply sunken eyes, sparse or absent eyebrows, and edema of the lower lids.—*Wien. Med. Woch.*, 1910, col. 44.

BACTERIOLOGIC EXAMINATION OF THE BLOOD IN SURGICAL INFECTIOUS DISEASES

N. Spassokukotzkaja has the following in the *Russki Chirurghitscheski Archiv*, II, 1909: Postmortem examination of the heart-blood usually gives the same results as examination of the blood of the same patient during life. Thus, appearance of the bacterium coli in the blood of the cadaver must be regarded as a postmortem phenomenon.

In acute osteomyelitis bacteremia occurs as a rule even before any local phenomena are apparent. In erysipelas, bacteremia makes its appearance very early and disappears when the erysipelatous redness makes its appearance. When bacteremia shows itself in the course of surgical infectious diseases, with local phenomena, it indicates the severe septic character of the disease.

Infectious diseases provoked by pus-forming microorganisms, without any local manifestation, usually run an especially severe course. Sepsis is not a disease but a complex of symptoms which indicates the severe course the disease is taking, and any and every infectious disease may in its course present this clinical picture. In sepsis provoked by the staphylococcus aureus bacteremia results, as a rule. In staphylococcus sepsis there usually will occur metastases. Streptococcus sepsis runs its course without bacteremia, and metastases usually are absent.—*Wiener Med. Wochenschr.*, 1910, No. 12.

HYOSCYAMUS SEED AMONG POPPY SEEDS

Von Doogen, the controller of the seed station at Budapest, noticed the presence of hyoscyamus seeds among poppy seeds. In consequence of a number of cases of poisoning which were traced back to the ingestion of poppy seeds a large quantity of the same were ordered to be examined. This resulted in the discovery that the poppy seed which came from Russia contained a large percentage of hyoscyamus seed. It is probable that on the Russian poppy fields the hyoscyamus plant grows as a weed and both are harvested and thrashed together, hence the contamination.

The treatise contains a thorough discussion of the occurrence of hyoscyamus seed, the toxicity of the alkaloids it contains and what is to be done in case of poisoning with it. Hyoscyamus contains mainly hyoscyamine and hyoscine in combination

with malic acid. Hyoscyamine is isomeric chemically with atropine and the aspect of an intoxication with hyoscyamine is the same as one with atropine. As small a quantity as .00025 (1-250 grain) of hyoscyamine is sufficient to cause disturbances in the human body. In the majority of examinations made of Russian poppy seed there were found in 100 Grams (1500 grains) from one to twenty hyoscyamus seeds. In four specimens, however, there were even from 1600 to 3500 hyoscyamus seeds! From this it follows that in using specimens of poppy seed most contaminated with hyoscyamus the toxic disturbances of the latter may occur after the ingestion of from two to five seeds only of the contaminating specimen.

The most popular dishes with poppy seeds in Hungary are: poppy tops (*Mohnkippel*), poppy bubbles (*Mohnstrudel*), and poppy vermicelli (*Mohnudelen*). For one killogram about 2 pounds) of poppy tops there are used 500 Grams (about one pound) of poppy seeds, so that at one meal there are consumed on the average 100 Grams (1500 grains) of poppy seed.

The danger begins according to the author with the use of a contaminated specimen of poppy seed which contains in 100 Grams (1500 grains) from 77 to 137 hyoscyamus seeds. A contamination of such a strength was observed in 19 out of 111 cases. The author found also the seeds of a number of other weeds in the specimen of poppy seeds which he examined.—*Pharmaz. Zentralhalle*, 1911, p. 113.

[In Russia, when a child, the GLEANER has eaten cakes made from poppy seeds, with honey.]

THE TRANSITION OF REMEDIES IN THE MILK

H. B. Koldewyn has recently published the thorough investigations made on the subject in the title. The animals used in this work were cows and goats. After giving a general historic resumé, the investigator reports every remedy he tried separately, preceded by a survey and description of the process pursued. The results are as follows:

Mercury taken as calomel or applied externally as unguentum hydrargyri is not demonstrable in cow's milk. The same is true of antimony, as tartar emetic, and of bismuth as the subnitrate, of zinc as the oxide, and of morphine and aspirin used as such.

Lithium, on the other hand, as lithium carbonate, and quinine and urotropin gave positive reactions. But even when the doses of these were very large the part which passed into the milk was very small. In respect to lithium Koldewyn found the remarkable fact confirmed, that it is a natural constituent of the milk. The author thinks that the quantity is nearly constantly the same, and is about 0.1 milligram pro 100 cubic centimeter. This quantity does not become augmented when lithium is administered.

In the goat the results with sugar of lead and alcohol were positive, but only when the amount given was given at once and in large quantities.

The results with cytisin, phenolphthalein and fluorescein were negative.

The results obtained differ in many respects from those we meet with in literature. And this is not to be wondered at, for it is to be taken, *a priori*, that the age, condition of health, and life conditions of the animals experimented upon, as well as the time and mode of administering the remedies, e. g., many small doses or a few very large ones, given at once, all will have their influence upon the results.

The results obtained by the author are, therefore, specially valuable because the description of his processes of investigation is given by him in exact detail so that they can be duplicated and imitated.

Along with the results on the milk the author mentions also the results of the passage of remedies into the urine.—*Pharmaz. Zentrallhalle*, 1911, p. 101.

ALCOHOL COMPRESSES FOR SUPERFICIAL INFLAMMATION

Moist compresses with 70 to 95 per cent alcohol give excellent results in all inflammatory conditions of the skin and of tissues close to the skin.—See Koehler.

Rabies From Skunk Bite

LAST summer I became a subscriber to CLINICAL MEDICINE through a friend, and in the first number I received I read of a brother who wanted a remedy for snake bite. I thought I was qualified to answer his question after my work in the southwest, i. e., Arizona, and I answered it. It was printed in the October experience number. I closed my article by saying that the above treatment did not include a remedy for the bite of a skunk which we occasionally had and resulting in hydrophobia.

In a later number Dr. C. S. Moody of Idaho criticized me very severely and stated that hydrophobia from the skunk was a myth, a southern negro superstition, and that if I could produce three reputable physicians' statements for one case he would give to charity a sum representing, as I take it from his figures, about one-half of his worldly goods and possessions.

I have collected more than the sufficient evidence and if you care to print what I am listing below with the permission of my colleagues in the west it may set some misguided persons in the smooth track and lift them from the rut that one gets into, so often, from doing reservation work, where about all he sees is sore eyes and smallpox.

I have permission to reprint all of the enclosed pamphlet, written by Dr. Yount. I was present when he read it at our Territorial Medical Society meeting in 1909, and it was approved by the entire society.

I can personally report the following cases which resulted indirectly from skunk bite:

Case 1. I was called to see a miner, A. B., working at the Savoy mine, near Crown King, Arizona, by the manager, M. Cunniff, and found a man suffering with a badly swollen arm, the results of a bite inflicted by a dog.

The dog, about two weeks before, had a combat with a skunk and was bitten by the skunk, which he killed. The dog had become very restless and his actions and manners were at times curious. From being very friendly to any one he become surly, and on this miner approaching him he sprang at his throat and was warded off by the arm, which was lacerated before the dog was beaten off. Home remedies were applied at the nearest house consisting of swabbing the wound out with pure carbolic acid, then applying turpentine and the laceration was then filled with bichloride of mercury and a well masticated chew of tobacco placed over it. As a finishing touch this was bound up and the dressing had been there for three days when I first saw it. My only treatment was to apply local applications. The arm presented a horrible appearance from the caustics.

He was immediately sent to the Pasteur Institute at Chicago and at last reports, several months after his return, he was doing nicely.

Case 2. Patient, D. E., a girl, age eight, Mexican, was lacerated on body and limbs by the dog just described. The dog belonged to this Mexican family. After treating the patient of the other case I started to see if any others had come in contact with this dog and this case was reported. I called at the school house where this patient was attending school and after inspection of her wounds advised the family to send her to Chicago for treatment and on notifying the

county supervisors they took charge of the case and I think this case was sent to the Pasteur Institute in care of her mother.

I was unable to obtain any of the nervous tissues of this dog as the body was burned after being killed, three days previous to my knowledge of the affair.

I will add the following incident that came under my observation, it being a case of hydrophobia in a wild-cat.

Roy Spense, of Palace Station, a road house on a stage line out of Prescott, Arizona, was aroused one night by a disturbance at the door and on looking out the window he saw a large wild-cat leaping and clawing at the door. On attempting to drive it away it attacked him and he was compelled to retreat to the house. After several ineffectual attempts to gain admittance to the house it left and proceeded to the corral and here another disturbance took place.

In the morning Spense proceeded to the corral where his horse was tied and he found a dead cat and a badly lacerated horse, the horse having killed the cat during the fight by kicking and striking it. The attitude of the cat during the preceding night was so entirely different from the usual sneaking manner of a cat that rabies was feared and the spinal marrow and a portion of brain was removed and sent to a Pasteur Institute for pathological examination.

A positive diagnosis was returned and instructions given to watch the horse. This being done it was soon noticed to be "off its feed" and acting queerly and was killed and body covered with brush and logs and coal oil and burned.

I believe this happened in the spring of 1909.

P. G. CAPPS.

Cisco, Ill.

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The following correspondence, sent us by Dr. Capps, explains itself. The writer of the first letter, Dr. Flinn, is superintendent and medical director of "Pamsetgaaf," a sanitarium well and favorably known to all residents of Prescott.

PRESCOTT, ARIZONA, February 15, 1911.

DEAR DOCTOR CAPPS: In reply to yours of February 7th, Dr. Yount is mailing you a reprint of an article by him on "Rabies," which covers fully the question of hydrophobia from skunk bite.

The only case which I saw personally was that of the hunter, Scanlin, who died at the County Hospital about two years ago, and which case is reported in Yount's paper. It was undoubtedly hydrophobia from the bite of a skunk. With kind regards, I am

Yours very sincerely,
JOHN W. FLINN.

—

The writer of the following letter, Dr. McNally, is chief surgeon of the Santa Fé and P. R. R., also surgeon to St. Mary's hospital at Prescott.

PRESCOTT, ARIZONA, February 10, 1911.

DEAR DOCTOR CAPPS: Your letter of recent date to hand, and contents carefully noted.

Doctor Yount will be able to give you exact data on one case, at least, of hydrophobia following the bite of a skunk.

The doctor attended a man by the name of Scanlin, a trapper, who was bitten about two years ago out from Hillside, Arizona. He came to Prescott at once, and the county offered to send him to the Pasteur Institute at Chicago. He consented at first, but later refused to go. He returned to Hillside, and about six weeks later developed pronounced symptoms of hydrophobia. He was taken to the county hospital, here at Prescott, and Dr. Yount attended him. The doctor invited nearly all the physicians of Prescott to see the case. I happened to be one of the number and remained nearly an hour studying and observing the patient and his symptoms.

I shall never forget that patient. As the disease progressed the spasms became more numerous, and more pitiable to behold; the weird cries and contortions of the patient, arose, progressed, and died away simultaneously with the "aura" of agony, which seemed to arise in the periphery of the entire nervous system, terminating in the pharyngeal and laryngeal centers. Morphine or hyoscine, even in massive and oft repeated doses, hypodermically, did not seem to influence the spasms very perceptibly, but they did do one thing, and in view of our present knowledge or ability to cope with the disease it was a good thing to all concerned—they seemed to hasten the end.

I left my wife in the buggy outside the hospital enclosure, over three hundred feet away from the room where the patient was restrained, and as you know she is not at all of a nervous temperament, but, when I returned to her she was bordering on collapse from fear and excitement, occasioned by the horrible cries, and terrible screams of pain and agony which reached her ears.

I am sure that Dr. Yount has exact and minute data on this case, and will give you the facts. With kindest regards to yourself and Mrs. Capps from Mrs. McNally and myself, I am,

Sincerely yours,
J. B. MCNALLY.

—

PRESCOTT, ARIZONA, Feb. 14, 1911.

DEAR DOCTOR CAPPS: I am sending you under separate cover a reprint of my report on "Rabies—With Report of Cases from Skunk Bites." This is practically accepted as authority here, as no one has ever refuted any statement I have made in it. The experimental work is very meager, but it is positive.

If I can be of further service let me know. Hope "you win."

Yours fraternally,
C. E. YOUNT.

We regret that we have not the space to publish Dr. Yount's paper in its entirety. We suggest that anyone especially interested, in the subject consult the original, which appeared in *The Southern California Practitioner*, March, 1910. It is probable that Dr. Yount can furnish reprints. Following is the portion of the paper of particular interest in the present discussion:

Let us now consider rabies in relation to Arizona. Since the classic paper of John G. Janeway, assistant surgeon, U. S. A., published in the *New York Medical Record* of March, 1875, in which he reported ten fatal cases of rabies from skunk bite, on the then Kansas frontier (Fort Hayes), the skunk has been a well recognized cause of distribution of rabies, and after you have studied the table herewith appended, showing the number of cases of skunk bite and of rabies collected in Arizona, occurring between May, 1907, and May, 1909, you will have to admit that for Arizona, at least, the skunk is the most prolific source of infection; in fact, almost the only cause of rabies, quite reversing the order of frequency given by the several authorities previously cited in this article, for other parts of the United States.

That rabies in the skunk seems peculiarly endemic in Arizona (at least during the two years mentioned) may be surmised by a comparison of what data we could collect from California, our neighbor on the west, and New Mexico, our eastern neighbor. Dr. L. M. Powers, Health Officer of Los Angeles, informs me that "There is no Pasteur Institute in this city and I do not know of one this side of Chicago. From all the sources of information I have not been able to learn of any case of human rabies ever having occurred in this city and do not think any person has ever been sent from here to any institution for the treatment of rabies. Some eight years ago there were several cases in dogs."

From the records of the Chicago Pasteur Institute for the past eighteen years, New Mexico has sent them only 4 cases for treatment as against 33 sent from Arizona. The Pasteur Institute at Austin, Texas, from August, 1904, to August, 1908, received 5 cases from New Mexico and 4 from Arizona.

Report of cases of rabies following skunk bite.

Case 1.—R. M., female, age seven years, living near Prescott, was bitten during the night, May 19th, 1907, while sleeping in a tent, by a skunk, upon hand and face. Wounds were cauterized the next day and arrangements were made to send the patient to the Chicago Pasteur Institute, receiving treatment there about the seventh day after the bite. After receiving the course of treatment at Chicago, she returned to Prescott. She was told to keep quiet and out of the sun; this she failed to do. On June 28th, or 41 days after the bite, she developed symptoms of rabies, death occurring on June 30th. No autopsy was held.

Case 2.—J. W. S., trapper by occupation, age 60 years, living about 65 miles from Prescott, was bitten above the left eye while asleep in the open, August 28th, 1908, by a young skunk of one of the large varieties. The skunk was killed by patient by choking, as he tore it from its furious grip on his flesh. The next day patient came to Prescott, where his wound was cauterized. The skunk was not examined bacteriologically. For some unknown reason patient returned to his traps, though it was his purpose to go at once to the Chicago Pasteur Institute. Forty-one days after the bite the first symptoms of rabies were noted (difficulty in swallowing and pain and redness in the wound) when he set out again for Prescott and medical attention. His case presented the classic symptoms of furious rabies, suffering indescribable agonies until relieved by powerful narcotics, and on the evening of the forty-fourth day by death. The medulla was removed and placed in a mixture of equal parts of neutral glycerine and water and sent to the Public Health Laboratory at Washington, D. C., for examination. The report of the director of the laboratory, Major J. M. Rosenau, is as follows:

"I have to say that the bulb of a human case of rabies arrived here safely but was so much disintegrated that nothing definite could be made out on microscopic examination.

"On October 21, two rabbits and two guinea pigs were inoculated subdurally with this material. One of the guinea pigs died November 8 and the other November 11 with characteristic symptoms of rabies. Negri bodies were found but they were very small. One rabbit died November 14 and the other November 20, with symptoms of rabies. Negri bodies were found in both rabbits.

"I am sending two slides from the rabbit that died last as the bodies are larger and more numerous than in the case of the other animals."

We present the following conclusions:

1. We do not wish to overestimate the importance of the skunk as a source of rabies by the tabulation of cases above presented, but inasmuch as only one other case of infection was reported during the time our data were being collected there is but one rational conclusion (if we are permitted a conclusion from such a small number of cases and covering only two years)—namely, that the skunk is the most prolific endemic source of the propagation of rabies in Arizona. (There was one case of rabid coyote bite during this period and one of a rabid dog, since this period. The dog was bitten by a skunk.)

2. We believe that epidemic rabies would have a greater number of victims and would spread more rapidly here, as elsewhere, if distributed by the most common carriers, the dog and cat.

3. In the absence of experimental proof, we believe that there is no such thing as a "hydrophobia skunk," per se; that all skunks are, like a few other animals, very susceptible to rabies; that no particular species is more susceptible than another.

4. When a skunk, an animal nocturnal in habits, generally timid, attacks man or any other animal, and inflicts a bite, if the skunk is not killed and its bulb examined bacteriologically, it were better to accept this sudden change of disposition on the part of the skunk as *a priori* evidence of rabies and seek Pasteur treatment at once.

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[While we are discussing rabies I want to call attention to the fine article upon this disease in the 1909 report of The Bureau of Animal Industry, by Dr. John R. Mohler, Chief of the Pathological Division.

Reporter	Residence	Cases bitten by skunks in Arizona from May '07 to May '09	Cases bitten by skunks developing rabies May '07—'09	Treatment	Result	
					Died	Cured
B. G. Fox	Health Officer Gila County	1	0	1 Chicago, Pasteur Institute	.....	1
A. P. John	Health Officer Yuma County	0	0	.....	.....	.....
Roundsville	Health Officer Coconino County	1	0	1 Chicago, Pasteur Institute	.....	1
Milligan	Coconino County	2	0	2 Chicago, Pasteur Institute	.....	2
Kingsley	Nogales	1	0	1 Austin, Texas, Pasteur Institute	.....	1
Witmore	Tucson	0 in 17 yrs.	0	0	.....	.....
Lacey	Solomonville	0 in 25 yrs.	0	0	.....	.....
Drane	Roosevelt	1	0	1 Permanganate injection	.....	1
Palmer						
Whiteside	Kingman	0	0	0	.....	.....
Godfrey	Sup't Public Health Phoenix	0	0	0	.....	.....
		0	0	0		
Brockway	Florence	0 in 15 yrs.	0	0	.....	.....
Clymer	Yuma	0 in 6 yrs.	0	0	.....	.....
Fale	Clifton	0	0	0	.....	.....
Brown	Kelvin	0 in 4 yrs.	0	0	.....	.....
Minetta	Jerome	0	0	0	.....	.....
Maisch	Globe	4	1	3 to Pasteur Institute	.....	3
				1 Not Treated	1 Died	.....
Powell	Wilcox	2	2	2 No Pasteur treatment	2 Died	.....
Yount	Yavapai	6	2	1 No Pasteur treatment	1 Died	.....
				5 Pasteur treatment	1 Died*	4
		Total 18 cases bitten by skunks.	Total 5 cases bitten develop rabies.	18	5 Died	13 Cured

*7-year-old child bitten on hand and face, getting to Chicago Pasteur Institute about seventh day after bite.

According to Dr. Mohler this disease is more common than most of us imagine, and it is increasing. Many hundreds of human cases are treated every year in the different Pasteur Institutes, which are located at Washington (Hygienic Laboratory), Atlanta, Ga., Austin, Tex., Baltimore, Md., Chicago, Ill., Iowa City, Ia., Jacksonville, Fla., Minneapolis, Minn., Montgomery, Ala., Newark, Del., New Orleans, La., Pittsburg, Pa., Raleigh, N. C., Richmond, Va., St. Louis, Mo., two in Indianapolis, Ind., two in New York City. There are records of 82 deaths in 1908, from the registration area, covering half the population.

Among animals there were 1167 positive findings in 1908, and these were probably but a fraction of the cases, the vast majority being unreported. Thus, in Wisconsin the state veterinarian estimated that 584 animals died of the disease during the year (1908). It probably occurs in every state, definite reports coming from all except Idaho, Utah, Nevada and Oregon. Texas is said to have more cases than any other state in the Union.

In 1903 Negri found certain protozoan-like bodies in the ganglionic cells of rabid animals. These are called "Negri bodies" and are claimed by the discoverer to be the specific cause of the disease, an opinion which is concurred in by Mohler. They are found in more than 96 percent of the cases, and are now universally considered diagnostic of the disease. They are from 0.5 to 25 microns in size, oval or pear-shaped and strongly eosinophilic.—ED.]

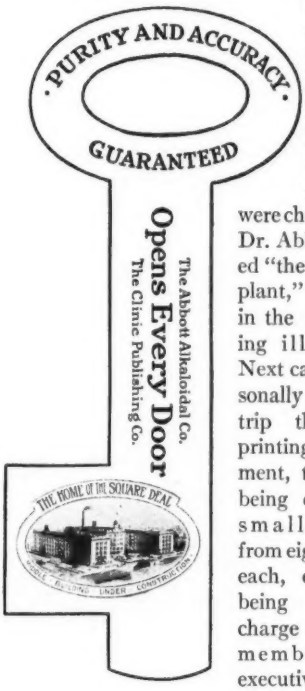
WE ENTERTAIN THE GRADUATING CLASSES OF THE MEDICAL COLLEGES

For several years it has been our custom to invite the graduating classes of different Chicago medical and veterinary colleges to become our guests for an afternoon and an evening. At first we entertained only a few, of the senior classes (and they didn't turn out very well), but during the last two years we have endeavored (with good success) to persuade every senior student of every college in this city to come out to Ravenswood in a bunch and see us, and we have tried as hard as we know how to give every man and woman who did come "the time of his (or her) life". This year we had with us students of the Chicago College of Medicine and Surgery, Bennett, Reliance, Jenner, Hahnemann, Hering, the College of Physicians and Surgeons, College of Medicine and Surgery, Northwestern, and Rush.

Probably five hundred students have "broken bread" (and other things) with us

since the first of January. We should like to describe every one of these visits in detail. Each has had its peculiarly interesting features, but we haven't the space, even if we had the memory for all the items of interest. The following description applies particularly to the visits of the last two classes which came to our plant, that is, of the seniors of the Northwestern University Medical School and the upper classes of Rush Medical College.

The boys were escorted out to our plant in a body, a representative from our house being sent to the college to act as guide. When they arrived, in the early afternoon, they were taken to the top floor of the publishing building, where their hats and coats were checked. Then Dr. Abbott presented "the key to the plant," as shown in the accompanying illustration. Next came a "personally conducted" trip through the printing establishment, the students being divided into small groups of from eight to twelve each, each group being placed in charge of some member of our executive staff, who acted as guide.



In the printing plant all stages in the production of magazines were shown: the setting of the type on monotype machines, which not only make every individual type, but set it up at a single operation. They saw how the forms are made up, electrotyped and printed, the great machines which take up the different segments of the printed magazine or book and wire them together, as well as the processes of trimming, binding and mailing—in fact, everything which goes to the production of a high-class journal.

In this plant of ours, not only is THE AMERICAN JOURNAL OF CLINICAL MEDICINE printed, but also such well-known magazines as *System*, *Factory*, *Popular Electricity* and *Dressmaking-at-Home*.

Next comes the power plant, located in the central building. Here are seen the great self-stoking boilers which produce the heat as well as the power and light for our enterprises; also the most modern engines, dynamo and electrical equipment, our entire plant being operated as well as lit by electricity.

Most time, however, is spent in the laboratory building, which the young men inspected from top to bottom. Every stage of the manufacture of drugs was shown. For instance, they were shown just how arbutin is extracted from uva ursi, every stage of the process being in course of operation at the time, including the grinding of the leaves, the extraction of the drug by percolation, the removal of the tannic acid, the concentration of the fluid, the separation of the crystals of arbutin by centrifugal machinery, and the final processes of recrystallization and purification.

Seeing this they could understand why samples of uva ursi varying several hundred percent in strength, carrying 15 percent of digestion-disturbing tannin, could not possibly equal or even imitate arbutin in therapeutic efficiency.

The boys were greatly interested in these processes, and in learning how such drugs as digitalin, emetine, colchicine, salicylic acid, nuclein, lecithin, the sulphocarbolates and other drugs are produced. Of especial interest to them on this floor were the analytic, physiologic and biologic laboratories, in which were illustrated briefly the methods of testing drugs, elaborating manufacturing methods, as well as the making of bacterial products, and the examination of pathologic specimens of all kinds.

On the floor below they were shown how these drugs are made into finished forms, that is, into tablets, hypodermic tablets, triturations, granules and pills, and at this point there was a short rest and a talk was

Students of Northwestern University Medical School

given by Mr. M. M. Burdick, of the manufacturing staff, upon the relative certainties and uncertainties of the active-principle remedies and the galenics, as illustrated by specimens of drugs, crude and manufactured.

On the floor below this they inspected the editorial and business offices of THE AMERICAN JOURNAL OF CLINICAL MEDICINE, visited our rapidly growing library, which is indexed for convenience of consultation not only on the part of the editorial staff of our journal, but by the physicians in this portion of Chicago or from out of town, and saw the offices of Dr. Abbott and his immediate "family" of helpers.

On the first floor methods of receiving, handling and filling orders, the adjustment of accounts, and the general financial administration of a great enterprise of this character, were shown in detail.

But while practically every one of these Rush and Northwestern boys expressed himself as intensely interested in these things, the production of literature, the publishing of magazines, and the manufacture of drugs, the real event was the dinner, served on the top floor of the publishing building, where a special room has been assigned and prepared for events of this kind. What healthy medical student is not interested in a "feed"? This room was decorated with flags and flowers, and when the boys put in an appearance, promptly at six o'clock, everything was ready for a generous meal, and for a royal good time. The dinner was prepared and served by our own employees. It was a good dinner, if we can believe what the boys tell us. We know that they approve of the volunteer "waitresses," the girls who write our letters, fill the orders of the doctors which come in by mail, enter up the subscriptions for CLINICAL MEDICINE and otherwise serve the interests of the entire "family."

After the dinner the fun began. We had music, presided over by "Hogan the Inimitable." Hogan, you must know, is the superintendent of the Ravenswood Branch of the Chicago Postoffice—and there is only one Hogan. He is an Irishman, and that explains the overflow of wit, the stories that he can tell, and the songs he sings, especially, "Patrick J. O'Hare," and "Has Anybody Here Seen Dodson?" The boys also approve of Hogan.

We have a little song-book which is used on these occasions, modified from time to time to meet the special necessities of every class. This song-book contains such classics as "E-Yip-I-Addy-I-Ay," "Has Anybody Here Seen Kelly" and "In the Good Old Summer Time." Everybody sings, and selections from the song-book are liberally interspersed throughout the entire program. Then we have some musical volunteers, some from the home bunch, some from the classes themselves. Last time our proof-reader, Mrs. Tate, and her son Wallace, delighted the crowd, and during the last two occasions we have been favored with a male quartette from one of the local churches. On one occasion the boys brought along a pianist, on another, a violinist, and that violinist was so good that we have employed him ever since to help entertain the succeed-

Students of Rush Medical College

ing bunches. This youngster is using his gift of music to help pay his way through college.

Then we have a stereopticon "show," and Dr. Abbott, who is toastmaster, uses the screen liberally to give point to his stories and to his beautiful little talk on "Practice Building."

Doctor Abbott is a great toastmaster. He always has a ready word for every occasion, and the toasts which he proposes are uproariously received, especially that famous one to the girls:

"Here's to the girls; not too young, for the good die young, and who wants a dead one?

"Here's to the girls; not too old, for the old dye young, and who wants a dyed one?"

Some of the older readers of CLINICAL MEDICINE will remember the picutres drawn by Dr. Torgny Anderson, and published several years ago, showing the old-time doctor and the new. The first one showed the "old timer" with his saddle bags loaded with galenic medicines, leading a burro behind, also loaded with the remedies of the old school; doctor tired, horse tired, burro tired too. The second picture showed the "alkaloidal" doctor, the man of the new school, with a case of the alkaloids sticking out of his pocket, galloping home over the western prairies, after a visit—everybody happy, horse not least so.

These pictures were thrown on the screen, also others showing how difficult it is to force the nauseous teaspoonful or tablespoonful dose of the galenic mixture down the throat of the unwilling child, and how easy it is to give the granules, and why therefore the kiddies all love the active-principle man.

As a part of the talk Dr. Abbott told the story of the origin of this great business, and why and how the CLINIC came into being, beginning back in the days when he was a boy on the farm in Vermont, telling how he worked his way through school, again through the Medical Department of the University of Michigan. Then followed pictures of his first employee, of the first building, and groups of workers, growing larger and larger every year, finally culminating in the beautiful buildings which we now occupy and which the visitors had just seen.

This story was made personal by some reference to the qualities which have made for success in this enterprise, qualities which are just as essential to the building up of practice in the country town as they are for the creation of a pharmaceutical manufacturing plant.

That our interest in students bears fruit is shown by the many letters we get from them after they get out into the field. Here is one from Dr. B. A. Muster, a Kentucky brother:

"I bought my first bill of goods, three years and a half ago, on credit. At that time I was just out of college and in debt for part of my college expenses. I came here a stranger and opened up my office in an old meat shop, where I slept. Today I am out of debt, own a nice house and lot and keep two horses, as I have a large practice. Thanks to the alkaloids. Every medical society I attend I have something to say about you people."

This young man has learned what is meant by practice building.

But the speaking is not all one-sided. Members of each class enliven the occasion by impromptu speeches. When the Northwestern boys were here, representatives were called upon from the different states and from the foreign countries, and some beautiful little speeches were made. The same was true of the Rush class. While the faculties of the schools have not generally been very well represented, usually there are one or more of these men present and these too add to our pleasure and instruction.

Of course the students have always shown much interest in the addresses made by different members of *our* "faculty", recounting the reason for and the rise of the great active-principle movement. Various men have spoken at different times, but typical talks were those given the Rush boys. The speakers were Dr. W. T. Thackeray, who has had a long and unique career as a medical army officer, covering life in the Civil War, and on the great plains, as a medical member of the staff of Don Carlos, in the first Carlist rebellion in Spain, as a practitioner in the field, as a salesman of drugs and as a manufacturer and sales manager. He spoke upon "The Old Therapy and the Birth of the New." Dr. W. F. Waugh, Dean of Bennett Medical College, a man whom you all know, told us why active-principle therapy should replace galenic therapy. Dr. George H. Candler, also well-known to every reader of CLINICAL MEDICINE, gave an interesting talk upon the new medicine, and what it means to the new doctor; while Dr. J. Favil Biehn, our laboratory specialist, discussed the laboratory and its importance to the young physician.

Earlier in the evening souvenirs of the occasion were distributed among those present, including copies of the Digest of Positive Therapeutics, and a filled 9-vial case. These cases were used as a text for a portion of Dr. Candler's remarks.

Of course, the boys smoked. What would a dinner for medical students be without the "grateful herb?" Cigars were passed around after the dinner was comfortably digested and everybody was kept liberally supplied. Early in the evening everybody sang "Illinois," and pictures illustrative of this great State-song of ours were thrown upon the screen. There were the usual class-yells and that fine display of high-spirits which makes young manhood what it is. Finally the evening was concluded about 10:30, by the singing of "America."

Next year we hope to meet a new batch of medical students. They are hereby invited—now; also, every medical student, from every other medical medical college in America, Canada or the world.

Come and see us, all of you.

A CASE OF HEROIN POISONING

One evening, about 4 o'clock p. m., I was called to see a 20-month-old boy of usual

Senior Students of Bennett and Reliance Medical Colleges

Students of Hahnemann, Hering and College of Medicine and Surgery

good health. Found râles in the tubes, fever of 101.5° F., restlessness, and some cough. Bowels had not moved for twelve hours, and, with a furred tongue presented, I concluded to commence with six tablets of calomel and soda, each 1-10 grain, hourly. I prescribed the defervescent compound in suitable doses, and ordered a counterirritant over the chest. I returned to my office, but at about 8 o'clock the father called and said he wanted me to go and see the boy at once, as he "did not like the way he was acting."

I hurried over again and to my surprise found the child cyanotic, limp as a rag, blue, and breathing occasionally. It is needless to say that I got busy at once. There were two of the six calomel and soda tablets left, the child having taken four of them. I noticed they were off-color, and when no one was looking put one in my mouth. It was bitter. I opened my case and saw at once what I had done. I had gotten hold of a vial of 1-10-grain heroin tablets. My calomel and soda vial was purposely not labeled, but the vials had been shifted. The tablets in the vials had a very similar appearance both in size and color.

Four tablets of heroin of 1-10 grain to a 20-month-old baby in four hours was what I was up against. How would you have liked to have been in my boots? There were times during the next three hours that that child did "actually and only" breathe occasionally.

Some strong coffee was hastily made and given, strychnine injected, the bowels were thoroughly washed (child being too weak and limp for an emetic), hot baths used, and artificial respiration resorted to when breathing ceased at times and all seemed to be over.

A constant fight was thus kept up for over three hours, when slight improvement in breathing was noticed, and faint traces of color began to appear on the lips. A little later, when the child had sufficient strength, it began to yawn, and a hand found its way to the nose, which it attempted to wipe off its countenance, so vigorously did it rub. That yawning and rubbing looked mighty good to yours truly about that time, to say nothing of the dry-eyed mother of that child. Presently it opened its eyes and called for mamma, in a bewildered manner, and a 20-month-old baby had recovered from taking four 1-10-grain heroin tablets in four hours.

It was my turn to become limp, after relaxing my nerves from a three-hour strain. And as I walked home, I realized as never before, the responsibility assumed by us all, when we are called to administer to the sick, and how, without constant vigilance, the shifting of a vial in our case may cause a death.

This good family never knew that the child's desperate condition was due to carelessness of the doctor they had called to administer relief, and so far I have not felt called upon to inform them. They were satisfied that the child made a good recovery, the incipient pneumonia being "busted wide open."

Now I always look.

S. M. M.

——, Oregon.

[We learn a lot by our mistakes. Doctors make them, and druggists, and they do not always result as favorably as this one did. Heroin poisoning is unusual and this case, therefore, deserves close study. If other members of the "family" have had similar experiences I hope they will report as promptly and as frankly as this brother.—ED.]

APOMORPHINE IN STRYCHNINE POISONING

One of my lady patients whom I had treated for the last seven years for different ailments, lately complained of feeling weak, so I gave her thirty tablets of strychnine arsenate, of 1-30 grain each, telling her to take 4 a day, but to keep them out of the reach of her children as they were very poisonous. Three or four days afterward her husband asked me over the telephone what kind of pills I had given his wife, saying she had taken the whole "shooting match." I told him. Then I directed him to give her the home emetics, one of which is a raw egg beaten in a cup of lukewarm water. (If you never tried this before, just do so on yourself, and find out what it will do!) He told me she took the pills probably ten minutes before and that she would not take an emetic, as she wanted to die. About five minutes later he telephoned again, saying she had vomited and he thought she would be all right. I then prepared to finish my supper. Ten minutes after that he called me up and said, "Better come over, she is about all in." I got there in my machine in about five minutes.

The woman presented a perfect picture of strychnine poisoning. As my coat rubbed against her bare leg she went into a convulsion which lasted about three minutes, followed by several after that, one every half minute; some threw her out of bed. She had the risus sardonicus, opisthotonos, eyes wide open and staring, and during one of the severest attacks she moaned, "I am going."

I gave her a hypodermic of 1-8 grain apomorphine and 1-2 grain morphine. When after five minutes there was no nausea, I gave another 1-8 grain apomorphine. This I kept up, a dose every five minutes for half an hour, when at last she vomited and perspiration broke out. Then the spasms became less severe. I now gave pilocarpine 1-2 grain; morphine, 1-2 grain; and apomorphine 1-8 grain. I then left. In half an hour I returned and found her better, but still the jaw was set and the head thrown back. Pulse was very much slower and of better volume. For luck, I gave her another dose of apomorphine, 1-8 grain, and pilocarpine 1-2 grain. An hour afterward her husband informed me that she was better. This was 9 o'clock in the evening. On calling next morning, I found her in bed. but safe, only very sore and stiff and vomiting everything she swallowed. Four days later she was at my office, feeling good, but complained of much muscular soreness all over; she still was sick at the stomach but not vomiting.

I wish to add that no book I ever read mentions apomorphine as an antidote for strychnine, but I heard of it from Dr. J. P. Percival at Prague, Nebraska, ten years ago, who treated a farmer the same way for poisoning. Thanks to him.

F. J. KALAL.

Omaha, Neb.

A CASE OF INFANTILE PARALYSIS SUCCESSFULLY TREATED

In the acute stage, the child, a boy sixteen months old, was taken with fever. I was called and found a temperature of 102° F., one leg paralyzed and arm on same side partially so.

I treated the child on general principles, combated fever, cleaned out with calomel and oil. Gave sulphocarbolates in large doses. Massage along spinal column, first bathing with oil of turpentine the whole length of spine and drying it with a flat-iron nearly hot enough to blister (care must be taken not to blister); repeated this twice daily. I kept up the antiseptic and saline every morning. In two weeks the fever had left.

Then I put the child on calcium lactophosphate, 20 grains daily. Nuclein in 4-drop doses every four hours, blue mass every third night, and compound syrup of hypophosphites (Fellow's), 7-drop doses every six hours, gradually increased to 12 drops.

After six months' treatment the child is in good health; can use the limbs and is beginning to walk a little without support, although the leg is weak yet and a little smaller than the other.

G. W. Woods.

Broaddus, Tex.

DRUG IDIOSYNCRACY VERSUS ACTIVE PRINCIPLES

When attending lectures, the writer was taught that drugs, however administered, usually occasion certain happenings in the human system, and these happenings were termed the physiologic action of the drugs. Also that certain individuals show a peculiar susceptibility to certain drugs, or, on the other hand, exhibit no reaction at all; and this was called idiosyncrasy. It was very discouraging—no other therapeutic fact or fiction more so.

In any other line of endeavor the same cause under the same conditions will produce the same effect invariably, but in medicine, it seems, there is a peculiar inexplicable element, described as idiosyncrasy, which hampers,, perverts, increases or utterly prevents the action of drugs on the human economy, in certain cases.

It was thirty years ago when I was ruefully forced to accept idiosyncrasy as an explanation as to why drugs would not always do what they were expected to do. This was convenient but not at all satisfying, and after due reflection and reasonable experience, it would seem a more reasonable explanation for the peculiar actions of drugs might be found if carefully looked for.

I will remark here that, while not denying that idiosyncrasy may exist, I have never seen a manifestation of it when using alkaloids or pure active principles in general.

In the winter of 1875-6 I was employed in a drugstore learning the business. When making tinctures, the proprietor would weigh out the drugs and prepare the menstruum, then tell me to moisten the drug with the liquid in a mortar and "pack firmly in a conical percolator." This was done, and being young and strong, when I packed the percolator, it was packed. Then the lower opening in the percolator was closed and enough menstruum poured over the drug to cover it. Then (usually) a plate of glass was placed over the top to keep out cockroaches, flies, or mice perhaps, or possibly to prevent evaporation. After twenty-four hours the tincture was allowed to run through, and more menstruum poured on, "enough to make two pints."

I say the menstruum was allowed to run through; and sometimes it did run through, but, also, sometimes it did not. If I felt particularly strong while doing the packing, the menstruum did not penetrate the drug in a week. Under such distressing circumstances, the druggist would then take a wire and punch holes down through the mass, whereupon the "percolate" would come through very nicely—and some very fine tinctures we used to make together those times.

My boss told me that tinctures thus prepared were always the same in strength. I thought then he was mistaken—and am now sure of it—but as he was a man to take no back-talk from a "cub," we had no arguments about it. I don't know whether or not sick people who took those tinctures developed "idiosyncrasies." I am reasonably certain, however none of them were alarmingly affected by the alkaloids they contained. However, had your Dr. Smith become disgusted because drop-doses of our tincture of aconite proved ineffective and had given, say, fifteen or twenty drops, something might have happened; it would not, however, have been proof of an idiosyncrasy, only simply proof that he gave a powerful drug with absolutely no knowledge of its effective strength, or in other words, its alkaloidal content.

In an old medicine-case I have a 4-dram vial containing a dram of tincture of aconite. The bottle was filled about twenty-five years ago. Only a few doses of it were ever used, that remaining being the residue after years of evaporation. Should I have the temerity to give some of this tincture to a sick individual, nothing that happened would surprise me. Neither would it surprise me if nothing at all happened. In any case, I should not ascribe to idiosyncrasy what manifestly was due to a defect in the medicine.

No doubt some who read this will say such methods were very crude. They surely were, and they surely are. I do not believe druggists, as a rule, depart widely from formulas given in the Pharmacopeia for the preparation of a tincture by percolation; but no matter how carefully they follow directions, the fact remains that they have no certainty that the product is of any definite medicinal value whatever. Fluid extracts diluted with the appropriate menstruum are supposed to make tinctures of definite, unvarying strength—and perhaps they do. It is by no means uncommon, however, to find in even the best drugstore, pound-bottles of fluid extracts with an inch or more of sediment at the bottom. If the druggist is not sure of the strength of his liquid preparations, what chance has the doctor to know anything about them? Then, how illogical it is to fall back on idiosyncrasy as an explanation for every occasional erratic action.

When the most painstaking effort on the part of the most conscientious druggist (a pharmaceutical graduate, if you please) produces results so contradictory, what may be expected when the notorious sophistication of crude drugs is considered. I myself have found in ten pounds of ground slippery-elm bark enough pieces of hemp cord to make a rope long enough to hang the unregenerate rascal who fed it to the grinding machine. As a poultice, ground hemp may do very well, but as a demulcent it quite probably is inert.

The November number of this journal published Bulletin No. 8 of the State Board of Health of Kansas, showing an investigation into the quality of 57 samples of tincture of aconite procured in the open market in that state. Not a single sample conformed to Squibb's standard, the variance in efficiency being from 50 percent to below 5 percent.

I am aware that what are called standardized tinctures may be bought from manufacturers. I never heard of a druggist buying one, though, unless perhaps it was Warburg's or tincture of nux vomica. Truth to tell, if a wholesaler should receive an order from one of his customers for an ordinary tincture, his opinion of that customer's ability to conduct a successful drug business would depreciate very much; and very justly so, because the druggist is supposed to make his own tinctures, and usually does so to the very best of his ability allowing for the very frequent poor material at his command.

It would seem, then, that excessive, perverted or peculiar symptoms occurring after the administration of tinctures may not be due to idiosyncrasy at all, but to the defective nature of the crude drug utilized.

And so we might go through the entire list of pharmaceutical preparations and eliminate "idiosyncrasy" as the probable cause of the unusual action of drugs; and it is significant that the closer we confine ourselves to the use of active principles, or at least to preparations lending themselves the least readily to the admixtures of adventitious substance, the less frequently do we note undesirable action.

Pills must be as small as possible; they, therefore, seldom contain anything likely to occasion symptoms other than those desired. Tablet-triturates are particularly good preparations, easily soluble, and contain nothing objectionable. Hypodermic tablets and granules of alkaloids and other active principles are ideal, the acme of the manufacturing chemist's art.

Did anyone ever give an alkaloid or a glucoside hypodermically without producing at least some effect, unless the patient was moribund. I don't recall ever having done so, nor do I recall any peculiarity of action after such medication which could be termed idiosyncrasy.

Recently a young Hungarian made a wager that he could drink a quart of whisky at one sitting. Being like the ameba, "eminently receptive and assimilative," he accomplished the feat. It was "Just Wilson, that's all," and it was a plenty. In about half an hour, when I saw him, he was unconscious, pale, with very labored breathing, and nearly pulseless. Anxious friends had placed a ten-pound cake of ice over his stomach, which may have caused his difficulty in breathing; still, I believe it was the Wilson. He was given hypodermically 1-15 grain apomorphine and a like quantity of strychnine (medicines directly

opposed to each other, but urgently needed.) The classic effects speedily developed, and through the night he passed up a variety of substances from his stomach, yet nothing in the nature of an idiosyncrasy made its appearance. And never has apomorphine failed me when quick emesis was desirable, whether in strychnine, ptomaine or other poisoning, or when quick relaxation was imperative.

And so with all other active principles, so far as I have observed; if they are absorbed or introduced directly into the circulation, the effect is prompt and always the same under the same conditions of the system. The absorbing surfaces are histologically the same in everyone, as are also the cells on which medicines act after absorption; it would seem, therefore, that definite chemical substances coming in contact with these cells under the same conditions should produce the same result always. It is an unfortunate fact, however that ideal conditions for the manifestation of physiological symptoms seldom obtain when we are called upon to give remedies.

The patient is sick, medicines introduced into the stomach may come in contact with an inflamed membrane from which absorption is slow or perhaps well-nigh impossible. Enormous quantities of powerful drugs may be taken under such circumstances and produce no effect; but the reason is obvious and idiosyncrasy plays no part in the matter whatever.

Or the cells may be loaded with the products of body-waste through lack of elimination, rendering further absorption of medicines impossible; and here again idiosyncrasy of the individual plays no part. Or, again, that particular eliminative organ, by means of which certain drugs most frequently are thrown off, is diseased and feebly functionating, and then long-continued administration of a certain drug gives one an excellent opportunity to observe that long-bearded and exceedingly venerable therapeutic condition known as "cumulative action," a near relative of idiosyncrasy.

And thus it would seem that what is termed idiosyncrasy, implying personal peculiarity as regards drug-action, is frequently merely the manifestation of peculiar drugs.

A. H. SOUTHWICK.

Limestone, N. Y.

FURTHER COMMENT ON SNAKE BITES

The editor or someone else has said that the January, 1911, number of THE AMERICAN JOURNAL OF CLINICAL MEDICINE is the best number ever issued by the publishers. He was right, I think; or, as one of my old masters would say (sacrificing grammar for emphasis), he was "very correct."

There are several splendid articles I would be glad to comment upon, because comment on an article causes many people to re-read such articles, and often with more benefit than results from the first perusal; but time and space must be taken into consideration.

Dr. Moody, page 83, tells us much truth about serpents. It is true that the poison of the serpent is not so fatal as many think. It is true that comparatively few serpents have any poison in their fangs. It is very likely true that some people die of fright and treatment after being bitten by snakes. But I cannot go quite so far as Dr. Moody.

Snakes in Idaho may not have the power of killing men with their poisonous fangs, but I can give the best of proof that horses, dogs, mules and other animals have been killed outright in the South by snake bites. Doctor Moody is right when he says that sometimes a snake has but little poison in its fangs. But at times the diamond-back rattlesnake in Mississippi has enough poison in its fangs to kill a mule within a few hours.

The cotton-moth (sometimes called the cotton-mouth, because its mouth is white as cotton) is another very poisonous snake. The bite does not often kill at once, but the poison is so strong that gangrene results, and sometimes large pieces of flesh slough off, enough to cause death, sometimes many days after the bite. I have known a dog to die, when not given treatment, in a few hours, after the bite of a cotton-moth.

For the shock resulting from a snake bite I know of nothing better than alcohol. I have used digitalis, strychnine, glonoin, and some other remedies, but none answers so well as alcohol for the shock.

But I did not begin with the idea of writing on the treatment of snake bites. I only want to say that snake bites are not so dangerous as many seem to think, and to express my appreciation of Dr. Moody's article, but with the above expressions as to the danger. I think the bite of some snakes are more fatal here than Dr. Moody seems to think they are in his field of labor.

C. KENDRICK.

Kendrick, Miss.

SODIUM CACODYLATE FOR SYPHILIS

I take this liberty of citing an experience with sodium cacodylate, which runs about as follows:

Patient, male, age 35, laborer, had syphilis with local sore one half year ago.

Recently I read an article by Dr. J. B. Murphy appearing in the American Medical Association *Journal* relative to the applicability and use of sodium cacodylate in the treatment of syphilis. I obtained and used this as carefully as possible, following his directions to the letter.

My case progressed satisfactorily for a week, when the reverse took place; the ulcer increased in size, with an increased area of infiltration and edema of the surface surrounding the perforation, headache of a frontal character became persistent, and there was some infiltration of the conjunctiva. This I presumed was due to a saturation of the patient with this arsenical preparation. However, I reduced my dosage in both size and frequency, but the results were no better.

Finally I abandoned its use entirely and reverted to the mixture of potassium iodide, mercury bichloride and succus alterans, with nuclein and the arsenates of iron, quinine and strychnine. Since then my results are more gratifying.

I write this to learn particularly whether or not you, yourselves, have had a like experience, or any of the "family."

I might add that the local treatment was principally that of a cleansing nature and tincture of myrrh applied directly to the ulcer.

What do you think about it, and if you now of anything I may have omitted, kindly state it. If condemnation is any clue, then let me have it. I expect to get mine at the Commandery tonight, so just a little bit more won't matter.

W. C. GREENWALD.

Indiana Harbor, Ind.

[Dr. Murphy is a fine surgeon, but—have you heard of anyone else taking sodium cacodylate seriously as a specific for syphilis. Just at present there is a craze for arsenic; which will be expected (as "salvarsan" or otherwise) to cure all the parasitic and numerous other diseases, probably for the next five (?) years. *Apres cela le deluge.* At the end of that time we shall know much more about the toxicology of the arsenic compounds, and perhaps have more faith in mercury.—ED.]

DEATH DURING CHLOROFORM ANESTHESIA DUE TO HYDROCYANIC ACID, AND ITS PREVENTION

In an article entitled "Sudden Death During Chloroform Anesthesia," appearing in *The American Medical Compend* of 1907, June issue, attention was called by the writer to the chemical action of the vapors of chloroform in the presence of ammonia gas, at the same time explaining how, during the process of metabolism, ammonia gas was formed in the human body and converted into urea.

In many experiments on lower animals, both prior and subsequent to writing that article, sudden death was produced by feeding the animal a meal of proteids, anesthetizing with chloroform, then injecting from 20 to 60 minims of ammonia water hypodermically.

While these experiments strongly favored the theory that chloroform united with the ammonia in the blood and formed hydrogen cyanide, that is, prussic acid, the writer was never fortunate enough to discover the presence of hydrocyanic acid in the blood of animals dying in this manner.

It has remained for two foreign chemists, B. Hancu and V. Gomoiu (see *Chemical Abstracts*, Oct. 20, 1910, p. 2842) to settle beyond all reasonable doubt that it is the hydrogen cyanide or prussic acid, that kills,

and not the chloroform as such, for the former deadly poison was found by them in the blood of two patients who died, one during and the other immediately after the anesthesia.

I have been asked by many whether such deaths are preventable and my answer is in the affirmative. Not only are these fatal terminations preventable, but should absolutely be prevented.

Under normal circumstances, the amount of ammonia in the blood depends upon the adjustment between the generation of acid substances during metabolism and the supply of bases in the food.

Formation of ammonia is the physiologic remedy for deficiency of bases. Under normal circumstances ammonia is kept at a minimum, being finally converted into the less toxic urea, a substance the kidneys easily excrete.

The defense of the organism against acids which are very toxic is an increase of ammonia formation, or more correctly, proportionately less of the ammonia is converted into urea.

Thus, when a patient whose blood contains a sufficient amount of ammonia to permit chemical combination with chloroform presents himself for anesthesia with the latter, his minutes of life are numbered, and he usually expires during the beginning of the anesthetic condition.

The physiologic preventive of excessive ammonia formation in the economy would be a diet tending to reduce acidity of the blood. Correctives are to be had in the administration of the fixed salts either of potassium or sodium, together with a suitable hepatic stimulant.

A sufficient number of deaths during anesthesia where chloroform is used supervene annually to justify a serious effort on the part of the medical profession to prevent these fatalities, for the time will soon come when the term "heart failure"—that kindly cloak behind which we are wont to take refuge at certain embarrassing moments—will no longer be accepted as a cause for sudden deaths where chloroform was the anesthetic agent.

LUCIEN D. CLARK.

Akron, O.

[This is an ingenious explanation, which may throw some light upon the too-frequent cases of sudden death, following the use of chloroform. Whether this theory will stand the test of modern physiological chemistry, or not, we leave for the experts to decide. But this is certain: There are altogether too many of these deaths—and very, very many of them are not "reported." Chloroform should he used as sparingly as possible—at best it is a dangerous substance—and this is made possible by the preparative use of the hypodermic anesthetic combinations.—ED.]

DID THIS BABY HAVE TYPHOID FEVER?

The infant daughter of W. W., age 18 months, was indisposed at the same time as her father, who developed smallpox December 15. She was vaccinated without result, although her mother and sister were successfully vaccinated at the same time. The baby had one typical pustule on the left cheek, which was not noticed until vaccination failed to take. Her health became poor, the weight failed, and she became weak and peevish, with a return to her former light-heartedness in a few days.

February 2 she refused to be moved from her bed, and showed a desire to be let alone, lying quietly without pain, sleeping a great part of the time, refusing nourishment. The temperature was 99.5° F., in the morning; pulse, 120; bowel movement very foul; skin, dry. There was little change in her condition for seven days, the temperature running an even course of 99° to 100° F. in the morning, and 101.5° F. in the evening; moaning when disturbed, rousing every two hours when nourishment was given.

The second week the temperature was slightly higher, showing 101° F. in the morning, and 102.5° F. in the evening—with remissions; pulse, 140°. Somnolence continued, weakness was more pronounced, but nourishment was taken more readily Bowel movements were dark, with diminished odor.

The third week was ushered in with cardiac failure; pulse, 180; skin, cold, clammy; a bluish shade around eyes and mouth. Stimulants brought reaction, but

the child gradually failed, dying on the 20th day.

During the last week, the temperature fell to the range of the first week; stools were free from odor, turning yellowish.

The treatment followed was the usual antiseptic treatment with the sulphocarbolates and copper arsenite, and brucine as a general tonic. Atropine was given for the somnolent condition but without effect. Concentrated nourishment was given every two hours in small quantities. There was no tympany. Nuclein was given on tongue, the last few days, in 10-drop doses every six hours.

Was this typhoid fever?

R. J. SMITH.

Collinston, Utah.

[We certainly should be unwilling to risk a positive diagnosis in this case. While the symptoms are of a "typhoid" character, this fact by no means proves that this was typhoid fever. It is unfortunate that no Widal reaction was taken. Some of these supposed-to-be typhoid fever cases turn out, on close examination, to be acute miliary tuberculosis. What say the family?—ED.]

A NICE COMPLIMENT

The January number of CLINICAL MEDICINE is a jewel of the first water—none like it to date for artistic make-up and for the variety of practical condensed contents such as the busy physician needs in everyday practice. CLINICAL MEDICINE now excels any medical monthly journal published, in clearness of type, in practical information, and in literary cleanliness in all its contents, even to its ads.

I sincerely appreciate what you have done to help the medical profession to elevate itself to a higher plane of usefulness and honor (notwithstanding that *The Journal of the American Medical Association* still fails to notice that such a journal as yours exists) for the benefit of all humanity. Continue to improve your journalistic in the future as rapidly as you have done in the past and you can smile at your detractors.

Pardon my hasty scribbling—I could not desist from saying a few words to help you stiffen your spinal column.

Yours fraternally,

J. W. HOFF.

Ann Arbor, Mich.

TWO NEW SIGNS OF SCIATICA

Sabrazes says (*Gaz. des Hop.*, Nov., 29, 1910, p. 1850.) that pain on pressure upon the tibia is characteristic of sciatica. There exists also in this affection a difficulty in crossing the affected leg upon the sound knee, which is flexed at right angles.

STRIKING RESULTS IN A CASE OF BRONCHOPNEUMONIA

In the afternoon of December 30, 1910, a lady asked me to visit her grandson who had been sick with an inflammatory condition of the lungs for about a week and a half. I secured the following information:

Since the beginning of illness a brother physician had made several visits, in the course of which prescriptions had been filled and refilled repeatedly and several applications of antiphlogistine made to the chest. When the name of the first physician in attendance was asked for there was a slight embarrassment. I asked to be shown the patient's medicine bottles and powder boxes, and unconcernedly I took notice of the doctor's name. I wondered why this family should be inclined to lose confidence in a man whose reputation is of no small degree.

The mother gave me the following statement:

On the previous evening the doctor had made his last visit. He examined the little patient and said that the right lung was still somewhat affected anteriorly; the temperature was 100° F. The latter statement the woman received with suspicion, claiming that the child was almost burning up with fever and that the pulse and heart were going at a galloping gait. Having completed the examination, the doctor thought that no further medicines were required as the patient was almost well again. Her suspicions still further aroused, the mother

began to reproach the physician for his seeming indifference, for taking fees without showing results satisfactory in return, and told him that there surely must be some better medicines than his own. These reproaches the doctor answered by stating that no one could do better than he had done and no remedies could produce results for the better more speedily than the ones he prescribed. The final result was that he advised her to call in another physician and discontinue his own services.

During the few minutes in which this information was supplied I watched my patient-to-be and his unsatisfactory environment. Upon entering the room (one of a light-housekeeping apartment) I was repelled by the extreme foulness of the air in which father, mother and the little patient were breathing, with every window closed tightly all night. Suspecting pneumonia, I at once pointed out the vast importance of fresh air in the sickroom, especially of this patient. In order to make a strong imression on their minds, I used a drastic example, stating that for three persons to breathe each other's expired air, in a small closed room like this one, was just as bad as for three persons to mix each other's bath water after bathing in it and then use it to drink.

The history, *status præsens*, and treatment of our little patient were as follows:

P. A., male, age 22 months. Had enjoyed good health up to the time he was placed in the care of another woman, during the absence of the mother several months ago; then had an attack of acute bronchitis, according to the statement. Present illness began with a similar condition about two weeks ago.

When first seen, the patient seemed comatose and cried when awakened. Extremely fretful and stubborn; pallor of face marked; respiration short and hurried; skin dry and hot; clear and anemic in appearance. The child refused to open mouth and show tongue, although intelligent enough to do so; no forced examination attempted. Upon percussion of thorax various degrees of dulness were obtained over different areas of both lungs, especially posteriorly; likewise some hyperresonance. Percussion induced coughing and crying.

Puerile vesicular breathing was almost entirely lost both anteriorly and posteriorly; breathing harsh, with small and large moist râles; over left lower lobe, in midscapular line, marked bronchial breathing and a peculiar highly ringing sound like the overtones produced on an instrument when one musical sound is struck. This symptom was noted only while patient was crying. Respiration irregular in time; pulse, 148, full and strong; temperature, 104° F. per rectum.

Diagnosis: Bronchopneumonia, secondary to a neglected bronchitis.

Treatment. Since patient's bowels had moved freely and often (probably due to former treatment), no time was lost with the administering of the usual clean-out remedies. Something had to be done for this patient at once.

For the control of fever and pulse-acceleration my choice fell upon the defervescent use of aconitine, digitalin and veratrine. So, according to the child's age, I placed 3 granules of aconitine, 1-134 grain each; 3 of digitalin, 1-67 grain each; and 3 of veratrine, 1-134 grain each, in twenty-four teaspoonfuls of water, with the direction to administer teaspoonful-doses every half hour for three hours, and then every hour until signs of improvement set in.

The accumulation of secretion in the air-passages induced me to ask for another portion of twenty-four teaspoonfuls of water, in which I dropped 24 granules of emetin, 1-67 grain each; and 24 granules of sanguinarine nitrate, 1-67 grain each, ordering a teaspoonful of this every half hour. Both solutions were sweetened with a granule of saccharin, 1-67 grain.

I noticed that the mother was watching me closely and could read by the expression on her face the doubtful attitude of her mind as to the efficiency of those few little pills; however, a granule of carmine in each glass made her feel that her child was to receive some real medicine, after all.

While the granules were dissolving, I called for material necessary to make a cool, wet chest-pack. But here, also, I had to deal with some opposition on the part of the mother, as she had, and many others have, used only hot applications in such conditions.

After assuring her that I had used this pack in many cases successfully, she allowed me to proceed uninterruptedly, and within five minutes we noticed the marked effect of the pack on the patient's behavior. He even gave me a smile before I left.

I ordered the pack substituted by another just as soon as the first became hot and the patient restless. That evening the mother gave two additional packs, being convinced now of the beneficial effect of the treatment. After the third pack the little fellow had a hard coughing spell through which a large amount of stringy, glairy mucus was brought up by the retching and vomiting.

I did not call again that evening, but the mother told me the following morning that the patient had sat up in bed about an hour after midnight and wanted bread and milk.

When I called on December 31, at 9:30 a. m., the mother received me with gratitude, and wondered whether or not the child had really been afflicted with pneumonia. The patient did not make the impression of being a sick child, although occasionally there was an attack of loose cough. On examining the lungs I was also very much surprised to find a calm and soft puerile breathing anteriorly and posteriorly excepting in the area mentioned over the left lower lobe, where breathing seemed more indistinct and distant. Pulse-rate 90, fairly strong; temperature, 98° F., per rectum.

The packs were discontinued, and expectorant cough remedies, a dose every two hours prescribed. The temperature being somewhat subnormal and the heart needing a tonic, I placed 12 granules of brucine, 1-134 grain each, and 12 of cactin, 1-67 grain each, in 12 teaspoonfuls of water, sweetened with saccharin, and ordered a teaspoonful every two hours. I also ordered a light, nutritious diet.

Of course, it goes without saying that as soon as the patient was in his first pack, I provided for an ample amount of fresh air and called much earlier the next day in order to learn whether or not the window had been kept open that night. On January 1, about noon, the patient refused to stay in bed; wanted to play and eat. Respiratory sounds almost normal; a few moist râles over large bronchial tubes; an occasional attack of loose cough. Temperature, 98.6 ° F., per rectum. Heart action good. I left the patient on the arsenates of iron, quinine and strychnine, with nuclein, three times a day.

No one could convince me that this was not a well-established case of bronchopneumonia, and I think the remedies used internally, together with the external application did the good work. These striking results were brought about by: (1) proper internal medication; (2) proper external applications; and (3) proper hygienic measures.

What results would Christian science or the like have had in a case like this one?

I shall let the capable editor pass upon this humble contribution to the "family" conversation.

J. FALTERMAYER.

Chicago, Ill.

—

[And the editor submits it to the "family" for comment, with congratulations on the skilful treatment and the favorable outcome.—ED.]

MODIFICATION OF TYPHOID FEVER BY CALCIUM SULPHIDE

It has always been my understanding that the editor of CLINICAL MEDICINE invites those who use the active principles in their practice to make such inquiries from time to time as may be of benefit in the use of this class of medicine. It has never before seemed necessary for me to resort to you for information, and for that reason I shall take the liberty of asking a very long question and one that to me presents some difficulties, in the way of answer. As a continuation of this preamble I must recite the histories of two cases.

The first patient is a boy of 15 years, the brother of Dr. H. M. Greene of this city. While attending school in a neighboring city he gradually became ill and finally was so sick that the doctor decided to bring him home for treatment.

His condition was as follows: A gradually increasing illness that was accompanied

with some cough, nosebleed, tympanites and tenderness of the abdomen, some disturbance of the bowels, delirium, temperature of from 100° to 104° F., rose-spots on the abdomen, enlarged spleen, and so on. In short, beyond the shadow of a doubt, he had typhoid fever.

At about the second week (the fourteenth day) of confinement to bed he developed a severe infection of one parotid gland. (I should have mentioned that there is an epidemic of typhoid in the city where he was at school.) In order to control the infection of the parotid we decided to give calcium sulphide. It was begun at a time when the temperature was 105° F. and pulse 108, the neck much swollen, the edema extending inward so as to push the tonsil well toward the middle of the throat.

The calcium sulphide was given in 1-grain doses every hour or so for a period of about forty-eight hours, when the temperature began to fall and by the time the third day was passing he had a subnormal temperature and a pulse of 76. From that time to the present he has had no rise in temperature, except for a few hours, on two or three occasions, when it went to 99° or 99.5° F. Ten days have elapsed and he is now sitting up.

Bear in mind that all this occurred right in the middle of his attack of typhoid fever and also that the "typhoid condition," with delirium, loss of appetite, and other symptoms, continued for nearly a week after the use of the calcium sulphide.

The next case was in all respects similar to the preceding one, except that the patient is a boy of seven years and has been all the time here in Portland, and his condition has not been so markedly typhoidal. I had, however, made a diagnosis of typhoid fever, and two days ago began the administration of calcium sulphide, 1-2 grain every two hours. At this writing his temperature has fallen from 104° F. to 100° F. and he is to all appearances going to get well *right now*.

Now, it is very little use to talk about "aborting" an attack of typhoid fever, as might appear from the foregoing, but, still, I should like to know "what the blazes" happened in these cases? When the first fall of temperature occurred in Dr. Greene's case it went down to 97° F. and the pulse to about 70. We were alarmed, of course, and ready for trouble, but the patient seemed to be in perfectly good condition and during his rational hours derided the idea that he was very sick. I thought he was, indeed, a very sick boy.

I want to know whether calcium sulphide has any antipyretic action when given in large doses? Does it depress the heart in large doses? Also, will it move the bowels? Are there any untoward effects whatever likely to result from large doses, and if so, what are they? I know nothing about the physiologic action of the drug, and I want to know.

My theory to account for an apparent crisis in Dr. Greene's case was evolved as follows: That the infection, as manifested by fever, rapid pulse, tympanites, and so on, is not so much due to the action of the typhoid bacillus as it is to the action of other pathogenic germs, and that these other pathogenic microorganisms occur mostly in the intestine. I also believe that typhoid fever, like certain other diseases, could be easily handled by the average individual, if he had only the pure culture of the typhoid bacillus to cope with. If the crisis in this case was brought about by the drug given, it was because the calcium sulphide killed all pathogenic action in the intestine and left a clear field for the patient and the typhoid germ to fight it out.

By the same token, why doesn't the calcium sulphide kill the typhoid bacillus? Surely, it can not, because of the distribution of that germ through the body-tissues. I believe there was evolved within the body of the patient a sufficient amount of antitoxins to cure the typhoid fever at any time, if only these antitoxins could have acted without the interference of other forms of infection, and that the calcium sulphide did perhaps give the patient a clear field for his battle. I am, however, quite at sea in the matter and consider it the most remarkable thing I have ever seen.

If you consider this matter to be of any benefit to readers of CLINICAL MEDICINE

I should be most glad for you to give it publicity; and I should also appreciate an early reply, unless I ask too much in thus taking your time. This matter, it appears to me, either is of superlative value or of no value whatever.

I am deeply indebted to Dr. Greene, for the treatment of his patient was conducted entirely by himself, and I only saw him from time to time and had opportunity to observe the foregoing. My own case, however, appears to be following his to the letter.

JAS. H. BRISTOW.

Portland, Oreg.

[Dr. Barstow's two experiences are certainly interesting. While calcium sulphide has never been recommended, so far as we know, as having any specific action in the treatment of typhoid fever, it seems to us that its use in this disease is entirely rational, though our theory as to its action is somewhat different from that of the Doctor. But first let us answer his questions—if we can.

So far as known calcium sulphide has no direct antipyretic action. On the contrary Rabuteau (quoted in "The Text-Book of Alkaloidal Therapeutics") says that it may possibly produce some fever, and according to the same writer it increases the activity of the circulation, also stimulating diuresis and diaphoresis, and loosening the respiratory secretion. It seems to have no depressing action and may be given in very large doses with impunity; 50 grains or more have been given daily in cases of gonorrhea, with benefit and no harm. It has no reported cathartic action. The reduction of temperature in these two cases is probably due to its action upon the cause of the disease—its destruction of the germ.

Calcium sulphide seems to have a decidedly antimicrobial or antizymotic action *in the blood*. While we do not know the specific cause of scarlet fever, measles or whooping cough, we do know that calcium sulphide does decidedly modify the course of these diseases, sometimes preventing or aborting them. Its action seems proportioned to the degree of blood-saturation. Can we not assume it as rational that the remedy might have a similar action in typhoid fever. This seems more logical than to count it among the intestinal antiseptics. *We* are convinced that it is rather an *internal* antiseptic. We have occasionally recommended its use in typhoid fever, in association with the sulphocarbolates, the intestinal clean-out, adjustment of circulatory equilibrium, and other indicated remedial methods, but we have never received reports enough to warrant deductions.

Perhaps Dr. Bristow's paper will elicit investigation and stimulate comment.—ED.]

A PRAYER

Apropos to "A Great Doctor's Prayer" on the cover of your March issue, I would like to call attention to the following:

These are the gifts I ask
  Of thee, spirit serene:
Strength for the daily task,
  Courage to face the road,
  Good cheer to help me bear the traveler's load,
  And for the hours of rest that come between
  An inward joy of all things heard and seen.

These are the things I fain
  Would have thee take away;
Malice and cold disdain,
  Hot anger, sudden hate,
  Scorn of the lowly, envy of the great,
  And discontent that casts a shadow gray
  O'er all the brightness of a common day.

I do not know the author of these lines, but they must have been written for or by a physician.

H. L. HARLEY.

Pleasantville, N. J.

A UNIQUE CONGRATULATORY LETTER!

Carissimi Doctores:—Tertio sive quarto die autea recepi non nulla exampla medicinarum alkal, una cum libello "Digestis Therap." et parvulis monographiis. De qua re iterum iterumque ago vobis gratias, nec desinam agere. Restat ut accipiam exempla JOURNALI AM. CLIN. MEDICINAE pro mense curr., Martio, 1911. Si quidem nondum est typis excussum neque transmissum officio postali, res bene se habent. Sin autem jam transmissum est neque allatum mihi, adjuvetis me, quæso, ut libellum meum recipiam. De quo si certi-

orem me feceritis, æquiorem mentem servabo.

Summo cum respectu ac diligentia hoc datum est a

JOH. BENJ. LAUDA.
Olim, M. S.

In oppido Murchison, Texas.
m. Martio d. 10, 1911.

[We receive communications in pretty nearly every language under the sun, but this is, I think, the first written to us in Latin—and it's mighty good Latin too. Get out your old dictionary and "Go to it."—ED.]

A CHIRURGICAL MYTH

The antiseptic tweezers and the chloroform-cup
Were lying in the basin when the needle gamboled up,
They looked upon the creature with a loathing undisguised,
It wasn't disinfected nor it wasn't sterilized.

They said it was a microbe and a hotbed of disease;
They steamed it in a vapor of a thousand odd degrees,
They froze it in a freezer as cold as banished hope,
And washed it in permanganate and carbolated soap.

In sulphureted hydrogen they steeped its little eyes,
And threaded it with silk worm of number two in size;
Then donned their rubber mittens and grasped it by the hand.
And elected it a member of the "fumigated band."

C. R. LAYTON, M. D.

Redmon, Ill.

AN APPROPRIATE SPRING POEM

One of the poems which Mr. E. R. Pritchard, secretary of the Chicago Health Department, occasionally recites to please his friends is the one that we print below. Who the author of it is, we do not know. Perhaps you do. If so, won't you tell us? It sounds like Riley, but it isn't Riley—though "just as good."

I wonder if most of us don't feel, right now, like the old Indiana farmer, who, we can imagine, is telling his feelings in this exquisite (no, that isn't just the right adjective—perhaps you can think of a better one) piece of verse. I know I do.

NOT RIGHT PEERT

Ain't felt right peert fer a week or two;
Been sorter cranky an' restless an' blue;
No p'tickler reason, es I ken see;
Can't find anythin' specially wrong wi' me,
Jes' don't feel frisky an' don't wanter do
A goldarn thing that I don't hev to;
Food don't taste jes' 'xactly right;
Sleep is kinder broken up at night;
Don't wanter set still and don't wanter walk;
Don't wanter keep quiet, and don't wanter talk;
Nothin' to hinder me from doin' jes
Th' very thing thet'll suit me bes';
Yet when I'm doin' jes' what I wanter to
I find it's jes' what I don't wanter do.
Now I wonder
What's the matter
Wi' me, by thunder!
'Tain't fever, sure—for my heat ain't riz;
'Tain't biliousness ner rheumatiz;
'Taint my head, fer I think right smart;
'Tain't my liver, ner yet my heart;
'Tain't stomach, ner gout—then goldarn me,
'Tain't nothin' at all, es I kin see;
En' yet it's somethin'—guess I'll go
An' see th' doctor; he'll sure know!

Seems t' me I remember this very same thing
Came on about this time las' spring;
An' th' doctor doped me with nasty stuff
By th' gallon, an' I bought drugs enuff
T' start a store; but Lordy, they
Couldn't drive that gnawin' inside away;
Somethin' jes' a-gnawin' at my inwards—th' same
Symptoms thet I hed when th' las' spring came
Gosh! what's th' use o' seein' th' doc;
He ain't got nuthin' et all thet'll knock
This here trouble thet allus comes
When th' birds all sing an' th' honey bee hums;
When th' ice breaks up an' th' streams all roar;
An' th' soft air blows through th' open door;
When th' vi'lets come, an' th' grass blades sprout,
An' the sun gits warm, an' th' world gits green,
An' a feller gets ornery, restless, an' mean;
Thar ain't no doctor in any place
Es kin properly diagnose his case.

The only cure fer a man I know
Is t' git right out o' town an' go
Where th' wil' ducks swarm an' th' geese go by,
An' th' trout an' bass are a-jumpin' high;
Th' on'y thin' thet'll cure him then
Is t' git away from his feller men,
An' loaf all day by some laffin' stream
An' fish an' whistle an' sing, an' dream
An' listen t' birds an' bugs, an' hear .
The voice o' th' woods in his eager ear,
An' smell the flowers, an' watch th' squirrels,
An' cast a fly where th' eddy whirls,
An' fergit that there's cities an' houses an' men
Fergit thet he's got ter go back agen
Fergit, when on moss-grown bank he's curled,
Thet there's enythin' else in th' whole wide world
But jes' him an' th' birds, an' th' bugs an' things,
Thet live right thar where th' wild stream sings.

Having read the preceding the following is naturally in order. The author of this, also, I am unable to give, and therefore, ask for information from members of the family.

It seems to me I'd like to go
Where bells don't ring nor whistles blow,
Nor the clocks don't strike nor gongs don't sound
And I'd have stillness all around.

Not real stillness, but just the trees'
Low whispering, or the hum of bees,
Or brook's faint babbling over stones
In strangely, softly, tangled tones.
Sometimes it seems to me I must
Just quit the city's din and dust
And get out where the sky is blue;
And say, how does it seem to you?

And then "our own poet" had to chip in. Here's his offering:

But my dreamin' friend, did you forget
There's a game today—already, yet?
That we who read the baseball dope
Have our jew'lry hocked on the Cublet's hope?
When Brownie pitches, an' his salary wing
Is workin' right, it's no time to sing
Of birds, an' flowers, an' fish, an' bees,
An' the voice of brooks, or the smell of trees!
Ferget it, pal, an' come with me
An' I'll cure your grouch—Ah! you shall see
Chance line it over the club-house roof,
Honus fan agen, an' Heinie hoof
Like a frightened deer, an' Evers there
Will merklerize them dubs fur fair;
An' the men'll holler, an' the wimmen scream
When we scuttle the ship of that Pirate team.
An' then, my boy, you'll feel like you uster;
As peert as a yearlin' bantie rooster!
Why talk of squirrels and fish, just when—
What's that you say? Cubs lost agen?
Oh rats! Where is that country real estate of yours anyhow?

MEDICAL HAPPENINGS

The *British Medical Journal* tells us that Alston has noted improvement in cases of yaws, treated by injections of salvarsan or 606.

—

The next meeting of the American Medical Association is to be held in Los Angeles, California, June 27-30. We shall be there and hope to meet *you*.

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Does any one who reads this want to employ an able man to keep books, make collections, look after his office and do any necessary outside work. We knew a good man—one who can do literary work also if required. Write us.

—

Milian, at a meeting of the Paris Medical Society, has reported a case of reinfection with syphilis after an apparent cure by 606. This is one of the strongest arguments yet advanced to show the completeness of the cures worked by this remarkable remedy.

—

In a letter just received from Dr. Arthur C. Bell, Dallas, Texas, he writes that he has recently removed a tumor weighing fifty-five pounds from a woman who only weighed seventy-five pounds after the operation. The patient made a nice recovery. That certainly is some surgery!

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The Mann Bill, changing the name and adding to the scope of the Public Health and Marine Hospital Service, passed the last Congress. It is now the Public Health Service. Our congratulations to General Wyman, an esteemed fellow member of The American Medical Editors' Association.

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Schroeder denies that the sudden withdrawal of morphine in the treatment of drug habitués is dangerous. At Breslau abrupt withdrawal has been the rule for years and alarming symptoms have not been noted. The morphine is replaced by veronal and hyoscine. Patients protest vigorously against withdrawal but this is to be expected. The management does not differ greatly from that of alcoholism.

—

The first bill ("Senate 1") to be introduced in the U. S. Senate during the extra session of Congress, just convened, was Senator Owen's bill "to establish a Department of Health." The bill proposes that the new Department shall absorb The Public Health and Marine Hospital Service, the Bureau of Chemistry from the Department of Agriculture, and the Division of Vital Statistics from the Department of Commerce and Labor. There are to be eight Bureaus, all told.

—

Prof. Wm. Lee Secor has been compelled to leave St. Petersburg, Florida, on account of rheumatism which affected him there. He has located in Kerrville, Texas, a hilly country near San Antonio. Here he is equipping the Kerrville Hospital and Sanatorium. Dr. Secor should do well. As a student he distinguished himself, taking the Hare Gold Medal on therapeutics, the year he graduated at Jefferson Medical College. For several years he taught in the Chicago medical colleges, before resorting to the south to devote himself to sanatorium work.

The region around San Antonio has long been known as are sort for patients suffering

with pulmonary troubles, and Dr Secor's sanatorium will offer one more means of treating these patients with strictly scientific up-to-date methods.

—

This year the American Medical Editors' Association meets in Los Angeles, just before the meeting of the A. M. A. The president is Dr. J. MacDonald, editor of The American Journal of Surgery. The fact that he is "on the job" assures a fine and profitable session. Every medical editor who is not already a member should join at once.

—

The medicopolitical pot is boiling in Chicago. President Bartzen, of the County Board, has shaken up the dry bones of medical precedent and self-constituted authority in the management of the public institutions, as never before in the history of the county. The Cook County Hospital is being completely overhauled, and the staff reorganized.

—

Dr. John B. Murphy, president-elect of the American Medical Association, and Dr. E. Fletcher Ingals, well known to all former students of Rush Medical College, are both sick in Chicago with typhoid fever. Dr. Murphy, it is said, is past the critical stage of the disease, but Prof. Ingals is still very ill. Shall we remind these distinguished gentlemen that typhoid fever is a filth disease?

—

The Chicago Tribune tells us that Caruso, the great operatic song bird, will be unable to sing again this season. We are informed that four doctors have made a special study of his throat. The most interesting item furnished by the *Tribune*, however, is that "the ailment from which Caruso is suffering is, according to the official diagnosis, poisoning of the *sacrothyroid* glands." Is this another of the eccentricities of genius?

—

Recently *The Journal of the American Medical Association* announced that match manufacturers had abandoned the use of the poisonous white phosphorus, felicitating this industry, on behalf of the medical profession, for the change. Now comes Dr. Robert H. Ivy who in the number of the *Journal* for April 8 says that white phosphorus isn't so bad after all, that there is no danger from it whatever, unless it is handled with inexcusable ignorance or negligence. Whom are we to believe?

—

The New York World has been investigating the remedies used in filling prescriptions in New York City. Three hundred samples were taken from many different drugstores in all parts of the city and submitted to careful examination, under the direction of Mr. Virgil Coblentz. The results were simply astounding. Of special interest were the variations in the strength of tincture of digitalis. But why anticipate? The whole story will be in CLINICAL MEDICINE next month. Be on the lookout for it.

—

Two New York physicians, Drs. Block and Hopkins, one a psychologist, the other an alienist and neurologist, have started a psychologic laboratory for the convenience of physicians. They propose to treat only patients recommended to them by physicians, using the psychotherapeutic methods now in vogue, including Freud's Psycho-Analysis, Block's Relaxation, Hypnotism, memory and association tests, etc. They have established offices at the Hotel Astor, 44th Street and Broadway, and have hours on Saturday afternoon from two until five o'clock.

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The thirteenth annual meeting of the American Proctologic Society will be held in Los Angeles June 26th and 27th, just prior to the meeting of the A. M. A. The president this year is Dr. George J. Cook, of Indianapolis. As usual a splendid program is presented, including papers by such men as Earle of Baltimore, Hanes of Louisville, Cooke of Nashville, Jelks of Memphis, Pennington of Chicago, Martin of Philadelphia, and many others. We urge all of our friends who are interested in this special field of practice (and what general practitioner is not?) to go early enough to the A. D. W. meeting to hear these papers. An especiallly interesting feature on the program is a paper to be presented by Dr. A. Teirlinck, of Gand, Belgium.

State Board Examination Department

Edited by R. G. SCHROTH, M. D., 546 Garfield Ave., Chicago, Ill.

[EDITORIAL INTRODUCTION—We take great pleasure in introducing Dr. Schroth, who is to edit this department, to the readers of CLINICAL MEDICINE. There is probably no man in America who has had such a large and varied experience in preparing medical students and physicians for the various state-board, hospital-interneship and Army and Navy medical examinations. Not only does he give private instruction, but he has public quiz-classes and regular courses of study, primarily with the end above-suggested in view, but secondarily as a real and exceedingly valuable "brushing up" for those who have become "rusty" in their technical medical knowledge. In doing this work he has evolved unique methods of imparting knowledge which enable him to get the maximum into a man in the shortest possible time; and as a consequence his students rarely fail.

We want to urge every reader of CLINICAL MEDICINE to follow this new department closely. No matter if you are not going away from home to a new location—it will prove an invaluable post-graduate course, just the thing to supplement our own correspondence work, and it will make you a better doctor. Write to Dr. Schroth. Tell him your troubles. Ask his advice and help. In the next number, if you want to test your powers (as you should), write out in full the answers to the questions which will be given and mail them to Dr. Schroth, who will give you a full report, with rating and advice as to how you can do better work.]

FOREWORD

Owing to the short space of time available, in which to prepare an article after being appointed the "State Board Editor" of this journal, and also because I have had a State Board class in session until within a day or so of the time limit on the article, it has been practically impossible to get up a suitable article on "Questions and Answers for State Board Examinations," which would do justice to this journal, and be suitable for the work, as it should be, and as it will be conducted in the future.

The questions given below were from a recent examination given by a State Board of a state of the middle west. The answers published were written in my office by a physician who was contemplating taking an examination after having been prepared by me for about two or three weeks. He wrote these questions with the request that his name be not published.

He happens to be a man who is above the ordinary as to preliminary education, has a retentive memory, is a good student, and his papers should receive a high marking; the answers are generally considered highclass.

Ten minutes were allowed to answer each question, in other words, an hour and forty minutes for each ten questions.

While there may be many points which could be added, and others which could be made more specific and to the point; others not answered exactly as to the purpose and extent which the formulator of the question intended, at the same time the answers show intelligence all the way through. As in all examination papers of this kind, there were some mispelled words, which were corrected, also a few mistakes, but these are found in all examinations.

This explanation is made to show the reader what is required, and what a person can do in so short a space of time. Hereafter it will be the earnest endeavor of the editor of this department to write articles which will be of benefit to those who may be interested in preparing for state board examinations and to give information which will be of the greatest advantage to the readers of CLINICAL MEDICINE.

R. G. SCHROTH, M. D.

CHEMISTRY

1. (a) Give a test for hydrochloric acid. (b) Why can this test for hydrochloric acid not be used in case of the gastric juice?

(a) The vapors of HCl turn moist litmus red, and give off dense white vapors with ammonia. (b) Because the HCl in gastric juice is associated with organic acids.

2. (a) If hydrogen and chlorine are brought together in the dark, what action takes place? (b) If brought together in diffuse light, what action takes place? (c) If brought together in the direct light of the sun, what action takes place?

(a) Practically no action. (b) If brought together in diffuse light, practically no action takes place except in the presence of large quantities of vapor, when chlorine water may be formed. If calcium salts are present, calcium chloride or bleaching powder may be formed. (c) In direct light, Cl has a strong affinity for H, uniting to form HCl, driving off the O from water vapor which has a strong oxidizing effect on all organic matter.

3. Give the formula representing the composition of the compound that is formed by mixing concentrated nitric acid with hydrochloric acid?

$HNO_3+3HCl=NOCl+2H_2O+2Cl$. Aqua regia. It is used as a solvent for gold.

4. How does the gastric juice, secreted by the glands of the stomach, differ from other digestive juices?

It is acid in reaction, and contains pepsin and rennin. Other secretions are alkaline and contain other enzymes or ferments, which are different from those secreted in the stomach.

5. What is KCN? What is the fatal dose? What are the antidotes?

Potassium cyanide or prussiate of potash. It is a white, granular, rapidly diffusible salt and very poisonous. Under five grains is the fatal dose. Antidote, ferrous sulphate and ferric chloride, followed by a solution of carbonate of potassium which produces an inert compound. Antidotes are of little avail owing to the extreme rapidity of the action of the poison.

ETIOLOGY AND HYGIENE

1. Give the etiology of cerebral softening.

Infarct, trauma, hemorrhage, embolism, thrombi, tumors, or obstruction of a cerebral end artery, rendering the area anemic, and it undergoes further change. These pathological etiological factors may be due to syphillis, tuberculosis, infectious diseases, or alcohol.

2. Give the etiology of cerebral meningitis.

The most common and direct cause is the diplococcus intercellularis meningitidis. Inflammation of the pia and arachnoid membranes may result from traumatism or contiguous inflammation. It may develop in the course of infectious diseases or pyemia. It may be due to a deposit of tubercles in the membranes.

3. Give the etiology of locomotor ataxia.

Most common cause is syphilis. Other causes are exposure to cold and wet, concussion, overexertion and sexual and alcoholic excesses. May be secondary to other forms of spinal diseases, metallic poisoning, hereditary neurotic influences. The direct etiologic factor is the proliferation of connective-tissue cells of the posterior column of the spinal cord, or posterior nerve roots or ganglia, pressing on the nerve fibers, preventing impulses from passing into the cord.

4. Name six efficient disinfectants, and name the different purposes to which each is especially applicable.

Sulphur, when burned in dry air, gives off SO_2, destroys germs by its dehydrating action; if air is moist, H_2S is formed, which destroys germs by acid antiseptic action. Formaldehyde, for disinfecting purposes, in closed rooms, etc. Carbolic acid, C_6H_5 (OH) for disinfecting clothing, etc. Bichloride of mercury, $HgCl_2$, 1 to 1000 for the skin, 1 to 10,000 for mucous surfaces. Oxalic acid for the hands and porcelain ware. Chloride of lime, $CaCl_2$, for disinfecting excreta, and effete material such as feces, urine, water closets, sewers, sinks, cess-pools, etc.

5 Upon what must the prophylaxis of typhoid fever be based? What are the possible and even probable means by which the bacillus may be conveyed?

The prophylaxis consists in securing a good water supply not contaminated by sewage; the avoidance of uncooked food that has been exposed to infection (oysters, raw vegetables, fruit, etc.) The disinfection of the patient's excreta, soiled linen; sterilize water and milk by boiling; screen houses, and prevent carrying of typhoid germs by flies and other insects. May be conveyed by contaminated drinking water, milk, oysters, contamination of food by flies (insects), animals, clothing, eating utensils.

ANATOMY

1. What changes take place in the ovum during ripening or maturation, before it is capable of fertilization?

The nucleus of the egg moves toward the periphery and divides by indirect division into two nuclei. One of these, called the polar body, is cast out of the egg. The other nucleus again divides into two, one of which, the second polar body, is also cast out. The remaining nucleus, called the female pronucleus, travels to the center of the egg. The ovum is then ready for union with the spermatozoa, or fertilization.

2. Classify and name muscles of shoulder joint. What structures are intracapsular?

Muscles of shoulder:

Anterior Thoracic Region	*Acromial Region*	*Dorsal Scapular Region*
Pectoralis major	Deltoid	Supraspinatus
Pectoralis minor		Infraspinatus
Subclavius	*Subscapular region*	Teres minor.
Lateral Thoracic region	Subscapularis	Teres major.
Serratus magnus		

The long head of the biceps; synovial membrane and fluid; head of humerus; glenoid ligament; surface of glenoid cavity; intercapsular ligaments of Flood and Schlemm:

The bursæ of the tendons of the muscles inserted into the greater and lesser tuberosities, sometimes communicate with the cavity in capsular ligament.

3. In oblique fracture of the shaft of the humerus immediately below the insertion of the deltoid, what muscles will draw the lower fragment upward?

Biceps flexor cubiti, triceps extensor cubiti, a part of the brachialis anticus, depending upon the obliquity of the fracture.

4. Give the origin, insertion, action, and nerve supply of the supraspinatus muscle.

Arises from the inner two-thirds of the supraspinatus fossa and adjacent structures and is inserted into the upper facet of the greater tuberosity of the humerus. Action, supports shoulder joint, assists deltoid to raise arm at right angles to the body and adduct the arm. Nerve supply, circumflex.

5. What are the two largest ganglia in the body?

Right and left semilunar ganglia.

6. Describe the celiac axis. What are its branches?

The celiac axis artery is the second branch given off of the abdominal aorta, anteriorly, and is about one-half inch in length; as soon as it arises it divides into gastric, hepatic and splenic branches and they supply the parts as named.

7. Why is the twelfth rib of importance to the surgeon, especially in connection with operations on the kidney?

It is of importance surgically, as it constitutes a landmark for locating the kidney. In nephrectomy the incision is made from 12th rib to a point just above the crest of the ilium. Twelfth intercostal nerve is sometimes low and may be severed.

8. What connects the choroid to the circumference of the iris What is the function of the choroid?

The ciliary body: To nourish the retina and lens and to darken the cavity of the eye.

9. How is the suprarenal plexus formed? What is there remarkable about the branches of this plexus?

The suprarenal plexus is a sub-plexus of the celiac plexus, which is a sub-plexus of the solar plexus of the sympathetic nervous system, receiving fibers from the pneumogastric and splanchnics. It is remarkable for its large size compared to the small size of the organ it supplies, and the large size of its fibers.

10. Describe the boundaries of the cavity of the pelvis.

The pelvis is formed by the union of the innominate bones in front and the sacrum and coccyx behind. It is divided into "true "and "false" by a plane passing through the promontory of the sacrum and the iliopectineal line. The part above this plane (the false pelvis) is formed by the expanding iliac bones, crest of pubes. The part below (the true pelvis) has its boundaries divided into those of the inlet, cavity and outlet. The inlet is bounded by crest of pubes, iliopectineal line and promontory of sacrum. The outlet by pubic arch and rami of ischium tuber ischii, sciatic ligaments and tip of coccyx. The cavity between the outlet and inlet is formed by the inner surface of the pelvic bones.

PHYSIOLOGY

1. Describe the functions of the red and white blood corpuscles and give the relative number of each found under normal conditions.

The function of red blood cells is to carry food and oxygen to all parts of the body and carbon dioxide and other effete material from the tissues to the lungs. The white cells take away the inflammatory exudate and broken down nitrogenous material as well as germs, and act as scavengers.

Red, 5,500,000 to Cm.; white 7000 to 10,000 per Cm.; one white cell to every 800 red cells.

2. Describe fully the effect produced on the circulation by intravenous injection of normal saline solution.

It increases the quantity of fluid in the circulatory apparatus, stimulates the blood-forming cells of the red bone marrow and acts as a tonic to the heart muscle and brain centers, assisting the blood in regeneration and preventing collapse of the veins.

3. If the auriculo-ventricular valves are insufficient, during what period of the heart cycle will blood escape from the ventricle into the auricle?

During systole.

4. Supposing that pyloric and duodenal fistulæ have been established so that there is no connection between stomach and intestines, the animal being fed through the mouth or by introducing food directly into the duodenum, which method of feeding will prove the most efficient? Why?

The duodenal method, because there are more ferments present, the food-products are absorbed and the effete material can be passed through the natural channels. If taken into stomach by fistulous opening the residue of the food would have to be taken out again after juices act on it.

5. What condition is produced by removal of the pituitary body?

A morbid condition characterized by increase of the distal parts of the extremities in thickness, but not correspondingly in length, the bones of the hands and feet and face being especially affected. Some of the fibro-cartileges also the related soft parts undergo corresponding enlargement. (Acromegaly.)

6. What do you understand by internal secretion? Give examples.

The production of certain juices or substances which do not leave the body by ducts but which enter the circulation and influence metabolism either by forming an antidote to certain juices or secretions or inhibiting their action or in some unknown manner act on the nervous circulatory or muscular apparatus. Suprarenal gland secretion and thyroid gland secretion.

7. During visual accommodation, where are parallel rays of light brought to a focus?

On the fovea centralis of the macula luteum of the retina.

NEUROLGY

1. Explain the difference between a neurosis and a psychosis. Give an example of each.

A neurosis is a disorder of the nervous system, not dependent upon any discoverable lesion.

A psychosis is a mental disease which generally has a discoverable etiologic factor.

Example: Neurosis, hysteria. Psychosis, delirium tremens.

2. Give briefly the symptomatology and diagnosis of so-called acute anterior poliomyelitis. State what has been brought out by recent researches into this disease.

Symptomatology: It occurs mainly in children during the teething period. Sudden onset, with convulsions, vomiting, diarrhea, delirium, headache, dull heavy pains in the back and in the extremities, and febrile symptoms. In a short time extensive palsy appears, followed by wasting and atrophy of certain groups of muscles. There may be incontinence of urine and feces; this is not permanent. Later the extent of the paralysis gradually diminishes until the loss of power and wasting are limited to certain parts that remain permanently deficient in nutrition, growth, and function. Sensibility is not affected. Degenerative reactions of nerves and muscle develop and the reflexes are enfeebled or lost.

(b) That it is a germ disease and contagious.

3. Give the treatment of herpes zoster.

The blisters should be protected by a dressing of ichthyol and flexible collodion, or a gelatin paste, medicated, if desired, with morphine, menthol, or some agent to relieve pain. Phosphide of zinc in the dose of 1-4 grain every three hours has been given with success. Phenacetin, antipyrin and sodium salicylate have been recommended for the pain. Morphine is sometimes required. Look after the general condition of the patient, in regard to diet, habits, and bowels.

PATHOLOGY AND BACTERIOLOGY

1. Give the pathology of cirrhosis of the liver.

The liver is hard and the surface irregular. It cuts with difficulty, revealing the hyperplastic bands of connective tissue around the lobules, which project from the cut surface. The color does not differ materially from normal. The liver cells are atrophied, particularly at the periphery of the acini; round cell infiltration is noticeable, and there is some proliferation of bile ducts.

2. Give the pathology of chronic peritonitis.

This condition is usually tuberculous in type, for we find tubercular areas of ulceration and caseation.

In syphilitics there is a large amount of proliferation of connective tissue and gumma may be found.

The peritoneum is injected, lusterless and covered with lymph. The exudate into the peritoneal cavity is at first serous, and may later become fibrinous or purulent. It tends to become localized by the formation of adhesions in the peritoneal cavity.

3. Describe fully the pathology of typhoid fever.

There is inflammation, ulceration and hemorrhage of Peyer's patches, enlargement of spleen and proliferation of mesenteric glands and catarrhal inflammation of the intestinal mucous membranes, intestinal hemorrhages, ulcers. The tongue is dry, furred and fissured. There may be pathological changes in the parenchyma of other organs, such as cloudy swelling, fatty degeneration, especially in liver, spleen and kidneys and brain. Thrombosis, embolism, infarction, and phlebitis in distant parts may occur.

4. Describe the lesions found in the lungs in bronchopneumonia.

The lung contains scattered areas of consolidation, corresponding to individual lobules, which are usually pale and surrounded by congested lung tissues and filled with round cells and inflammatory exudate. Other areas are collapsed and appear blue. Normal tissue is hyperemic and hyper-resonant. The cut surface of a consolidated lobule is smooth and moist and on pressure exudes a frothy serum from the healthy portion and a grayish yellow fluid from the affected areas. The lobules stand out prominently. The collapsed areas are those from which the consolidated material is expelled.

5. Give the pathological anatomy in fatty degeneration of the heart.

Size increased, color yellowish streaked and softer than normal. On cutting, fat globules exude and the knife is oily. The fat is deposited in granules between the muscle fibers and beneath the pericardium. Protoplasm and nucleus are displaced but maintain their integrity. Later the muscle fiber undergoes fatty degeneration.

(*To be Continued*)

CLINICAL · MEDICINE
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PART III—LESSON TWENTY

THE MANAGEMENT OF RHEUMATOID ARTHRITIS

It will not be denied that the various methods of treatment of what is usually termed acute rheumatoid arthritis are in the main unsatisfactory. The reason for this is not difficult to find, for we have to deal with a disease the causal conditions of which are not very well known and which, moreover, shows a marked tendency to be steadily progressive and is aggravated by occasional exacerabtions of acute and more rapid extension.

General Considerations.—Whether a microorganism is or is not the etiologic factor in this conditon still is a question. It seems certain, however, that we can not associate the diplococcus of rheumatic fever with rheumatoidal arthritis, although an organism of a different nature has been demonstrated in the joints of a certain number of cases.

It is necessary to emphasize the distinction between the active stage of the disease and the sequel which it leaves behind, for even during the latter stage there is apt to be a progressive crippling and incapacity due to the increasing contraction of the atrophied muscles. Yet, in the two stages the indications for treatment are entirely different.

In the acute stage our main object should be to shorten, so far as it is in our power, the course of the malady, for the shorter its course the less will be the permanent injury to the joints, structures and muscles, and the less the resulting deformity.

During the later stages, it should be our aim to minimize the crippling by judicious local measures. It is a striking fact that in the most severe cases in which disability compels repose from the beginning, the duration of the active stage is not infrequently shorter than in milder ones, when the patient has been at no time compelled to take to bed.

This suggests that absolute rest of the inflamed joints is of greatest importance in the early stages. If such rest could be enforced in all such cases at the commencement, we should see decidedly fewer examples of extreme crippling than we do at present. It follows that, if this is true, active local treatment, courses of bathing, and the like, valuable as they are in the later stages, are contraindicated in the acute stage, and experience bears out this inference. This fact is of supreme practical importance.

The conspicuous part played by muscular contraction in the production of deformities, and the fact that such contraction is secondary to the great muscular atrophy, which is a feature of the disease, suggest the advisability of massage as a preventive measure. This may be carried out even in the acute stage, provided the manipulation is strictly limited to the muscles, the joints being left

severely alone. We all know how difficult it is to secure the systematic carrying out over long periods of plans of treatment attended by no immediate benefit, being merely an insurance against future contingencies, but where such massage is systematically done, the muscular atrophy is certainly kept in check, and the ultimate gain well repays the expenditure of trouble and patience. Where there is little atrophy, there will be little contraction-deformity, but the actual damage to the joints themselves may nevertheless produce no slight crippling.

It is very generally recognized nowadays that a diet suited to a gouty patient is of no special value in such cases, and that our aim should rather be to give a generous diet in which the several main food factors are fairly represented, adapted to the special conditions of the case, such as the amount of febrile disturbance.

Drug-treatment has but little chance unless persisted in irrespective of immediate results; but it may be mentioned that in some cases aspirin proves very useful for the relief of pain and should be given a trial. But here is another condition: while the action of aspirin is conspicuous in some cases, in others apparently very similar this drug will prove quite useless. In view of the high opinion as to the value of guaiacol carbonate held by some, it should at least be given a trial, always remembering that the results claimed for it are to be looked for only if it be taken for long periods.

If a patient suffering from rheumatoid arthritis is seen early, we can very many times arrest—and I am bold enough to say, in some cases cure—the disease, provided the patient will carry out the orders strictly.

To Combat the Disease.—We can combat the disease by three methods, namely, first, treatment by diet; second, internal medication; third counterirritation. But these measures must be used in combination, as the omission of any one of them results in the patient's failing to make headway against the malady. On the other hand, if all three are steadily employed together, the result usually is quite gratifying.

First, the Dietetic Regimen.—The object aimed at here is, in brief, to provide a diet which is easily digested and assimilated and not likely to cause any gastric or intestinal fermentation, but from which all red meats, including mutton and beef, are eliminated, as the latter undoubtedly do harm in rheumatoidal arthritis. On the other hand, white meats and white fish are permissible, these being cooked by broiling, roasting, grilling or, in the case of fish, by brandering. No foods stewed in fats are permitted because of the difficulty offered by the fatty envelope to the gastric juice reaching the tissue to be digested. Further, since sugar, and particularly beet-sugar, very readily undergoes fermentation, and nowadays beet-sugar is pretty generally used by the public, this substance must be forbidden and its place taken by saccharin. For the same reason, potatoes, turnips, head of cauliflower, peas should be forbidden.

With regard to tea, a beverage which most patients do not like to dispense with, the ordinary method of infusion in boiling water is prejudicial because of the presence of free tannin, which is extracted in greater or less degree by the process. However, there is no objection to tea if it is treated with boiling milk, because the tannin then enters into an association with the albumen of the milk and forms a bland, nonastringent and innocuous combination. The tea is infused in the boiling milk for fifteen minutes and half a cupful of this infusion is poured out into the cup, which is then filled up with boiling water, saccharin being added if it is desired to sweeten the beverage. Coffee and cocoa may also be used when similarly prepared.

Well-boiled porridge is good, and with it milk and cream may be taken. Eggs lightly boiled, scrambled or poached may be taken by some patients without injurious effects, others find them unsuitable. Milk puddings prepared without sugar, clear soups, macaroni and milk soups are permissible.

Patients, on such a diet, do not necessarily become ill-nourished and thin. Indeed, they may even fatten. I have seen some who after using this diet for a time have discontinued it, getting worse when they resorted to eating any kind and all kinds of red meat.

Spirituous Beverages.—With regard to spirituous beverages, alcohol in moderate amount is neither beneficial nor the reverse in its influence on the course of the disease, but should it for any reason appear to be essential to the patient's well-being, whisky may be added to the dietary in small and accurately regulated amounts. Any kind of wine that agrees with the patient may be taken in small quantities, but perhaps a red wine, such as Burgundy, is the most suitable.

Woolen clothing should always be worn next to the skin, and exercise short of producing pain must be indulged in. A dry gravel soil and a warm dry climate are most suitable to patients suffering from rheumatoid arthritis.

The Use of Drugs.—The treatment of rheumatoid arthritis by drugs must be quite different from that of gout or rheumatism, and efficient measures must be taken to improve the general health of the patient. The drugs found most useful in combating this condition are guaiacol and potassium iodide.

Guaiacol Takes First Rank.—Guaiacol, if administered in sufficient quantities and for a sufficiently long time, is capable, in some cases, of arresting the disease, of diminishing the size of the joint, and permitting increased movement. It also relieves pain. It is useful both in subacute and in chronic forms of rheumatoid arthritis. This drug probably acts by arresting further infection from the intestinal tract and, after absorption, by combining with the bacterial toxins, and assisting in the removal of the hypertrophied fibrous tissues.

The most convenient form of administering guaiacol is in the form of the carbonate in cachets. This salt is a white powder which is free from the disagreeable odor, taste and irritating effects on the stomach of plain guaiacol itself. In the intestines it is slowly split up into guaiacol and carbon dioxide.

At first from 5 to 10 grains of the guaiacol carbonate should be given three times a day, the dose being increased by 1 or 2 grains each week until the dose reaches 15 to 20 grains. It is essential that this treatment be continued for at least twelve months.

The beneficial effects of the guaiacol are very much augmented by administering simultaneously a mixture containing potassium iodide, the depressing effect of the latter being counteracted by combining with it tonics, preferably the triple arsenates of iron, quinine and strychnine with nuclein.

As regards the dosage of potassium iodide, my experience is that patients usually tolerate full doses from the beginning, and under this course are much less liable to develop the distressing symptoms of iodism—especially if the drug be given in plenty of water—than if they are initially put on small dosage. My usual practice is to start them at once on 10-grain doses of the potassium iodide three times a day, and to continue this amount if it does not seem to disagree.

After the treatment with guaiacol carbonate and potassium iodide of a very large number of cases of rheumatoid arthritis, I am convinced that it is capable, in the large majority of cases, of retarding the progress of the disease and so of preventing the frightful suffering connected with movements of the affected joints—a condition so commonly following in cases of unrelieved rheumatoid arthritis.

If the treatment outlined is instituted in the comparatively early stages of the disease, then recovery with very little deformity may result; but even if after arrest of the process much deformity results, very considerable mobility of the joints may be promoted by baths, superheated air, massage, and passive movements. It is frequently remarkable, after a course of such treatment, how large a degree of mobility and capacity for usefulness has been restored to joints that were left in a severely deformed but quiescent condition.

The Value of Arsenic.—Arsenic and iron also are of great value when given in small doses for a period of three weeks out of every month. The action of arsenic, in the first place, is stimulant to gastric and intestinal digestion, whereby it increases the appetite. Secondly, it increases the activity of the tissues and, as a consequence, favors a better assimilation of the food ingested. Thirdly, it causes an increase of red marrow in the bone and so improves the condition of the blood.

I know of no better tonic to give along with the treatment above outlined than the triple arsenates of iron, quinine and strychnine with nuclein.

Physiologic Measures.—The thermal treatment of the affected joints, either by means of baths, superheated air or electric-light-baths, is most beneficial. Douche-massage with hot water is the most effective form of treatment, while perhaps next to that rank various baths.

Electric-light-baths, in which the affected joints are bathed in the heat and light rays reflected from a number of incandescent electric lights, prove beneficial in many instances.

Properly regulated movements and correct massage are of great use in overcoming the stiffening and fixation of the joints and the muscular wasting in their vicinity. Massage increases the volume of blood circulating through the joint-tissues, whereby their nutrition is improved. It also exercises a stimulant effect upon the trophic nerves, and tends to reduce muscular spasm and to relieve pain, while the absorption of recently formed adhesions also, probably, is prompted by massage.

Massage, in addition to its local influence on the affected joints and their proximate muscles, improves the general circulation and nutrition of the entire body. General light massage should therefore be applied, little or no attention being paid to massage of the affected joints for the first few days.

The form of manipulation which may be applied to the joints, with the best results, is the application of quick frictions or rubbings to the surfaces of the joint. In addition, gentle kneading and squeezing of the parts, particularly of the tendons and fibrous surroundings, should be effected. The effects of such manipulations are generally evidenced by the rapid absorption of exudative products in and around the joints. Active and passive movements of the affected joints should also be employed.

Counterirritation.—This is most usefully carried out by the employment of blisters. Each large joint has applied to it a blister once in every seven or ten days. The size of the blister employed for the large joints is one inch square. Some blisters may be applied to the smaller joints, or iodine may be painted on the skin in place of a blister, though the latter is certainly more efficacious. The counterirritant is applied at different areas all around the affected joints. One begins where the greatest pain and swelling exists and selects on each occasion an area of skin as yet unblistered. In this connection, it must be remembered that careful observation of the urine is necessary, the occurrence of albuminuria constituting a contraindication.

This counterirritant treatment has been pursued, in some cases, for two or three or more years, according to the extent and severity of the disease, and, it is believed, has tended to arrest the disease in many instances, as evidenced by disappearance of swelling, freedom from pain, regaining of power and locomotion and movement of the joints.

The diet should still be unaltered and the triple arsenates continued.

It is perhaps not necessary to state that one cannot hope to cause diminution in size or removal of the osseous outgrowth which occurs in the bone entering into the formation of the joints involved. Only the synovial increase and fluid infusions can be removed. But at the same time it is clear that no further osseous increase takes place so long as the patient follows out the details laid down for his relief.

Counterirritation of the spine also, in the form of linear blisters on both sides of the vertebra column, is of undoubted benefit in relieving the neuralgic pains so often associated with the disease, especially in the earlier stages. The blister should be applied to the cervical, dorsal or lumbar region, according to the distribution of the pain.

Intestinal Origin.—Into a discussion of the pathology of the disease it is not our purpose to enter, but I may be allowed, in closing, to remark that there is reason afforded by the widespread character of the disease for the surmise that some toxic influence is conveyed by the blood stream, and in view of the success which follows the line of treatment already outlined (and I might emphasize the necessity of intestinal antisepsis more, perhaps, than I have already done), one may perhaps not be wrong in

making the conjecture that the source of the toxicity may be referred to the alimentary canal.

Be the cause whatever it may, and however incurable many physicians think this disease to be, I feel justified in approaching cases of rheumatoid arthritis, not with a feeling of comparative helplessness, but on the contrary with the belief that in many of the cases a considerable amount of good can be done in the way of alleviating suffering, preventing deformity, restoring the use of the limbs, and in some cases affecting a cure by the means already outlined, in addition to the optimism and hope, encouragement, and belief in the final favorable outcome which the physician instills into his patient's mind.

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RHEUMATOID ARTHRITIS: ETIOLOGY AND THERAPY

We like to think that our ideas and beliefs are formed from wide experience, extensive reading, and profound meditation. That would surely be fine, were it true. In point of fact, many of our beliefs are actually founded on, or at least deeply colored by, a solitary case or instance; some impressive one that made a deep and lasting mark on our sensorium.

Look to the Alimentary Canal.—Whenever rheumatoid arthritis is mentioned, two instances come to my mind. One was that of a man who sat in a chair, unable to move any muscle except those of one hand. He was a tavern-keeper and probably a good patron of his own bar.

The other was described by Professor Craig; two cases, his own and that of his wife, cured by rigid dieting, excluding acids and acid-formers from their food.

The fibrous tissues involved are irritated by something, and that something must be brought to them through the medium of the circulation—*ergo*, we look to the blood for the excitant of this interstitial inflammation.

Alcohol as an Etiologic Factor.—We are compelled to look to the alimentary canal for the great majority of the toxins that appear and circulate in the blood. These may be derived directly from the food or from the decomposition of retained feces. In the case of rheumatoid arthritis it is probably the former to which the malady should be mainly attributed. This is evident from the connection between the disease and habits of alcoholism.

We now know that when alcohol is taken into the stomach, the poison is carried through the portal vein to the liver, which at once is aroused to activity in the effort to eliminate the dangerous substance. So engrossed is the liver in this duty that the toxic elements of the ordinary food that would otherwise be eliminated by this great intercepting apparatus are suffered to slip by and enter the circulation. These then are finally excreted by the kidneys and thus account for the increase of nitrogenous matter appearing in the urine after partaking of alcohol. But before being thus cast out they have circulated throughout the body and exercised their deleterious powers on the tissues and cells most prone to injury from them. In this case it is the fibrous tissues about the joints that are most seriously affected by these particular forms of toxin, and the result we see in rheumatoid arthritis.

Barkeepers are usually sluggish as to physical exercise, keeping late hours, and taking little care of their bowels or their general health. They get fat and plethoric, using by preference nitrogenous foods in larger quantities and proportions than working men do. Their breath usually is fetid, their skins are sodden or puffy, eyes bleary—not altogether from the alcohol they consume, but from the unhealthy habits of their lives as well.

Similar habits may well arouse the malady in persons not especially given to alcohol, but when present in addition, that agent is a powerful causal influence.

The liver of such people may be disabled by overloads of food, of condiments, or of drugs; for some cases of this malady are met with in opium habitués. Ordinary food with sedentary habits may account for arthritis when the same diet with sufficient exercise to utilize it might have proved harmless. Exposure to raw winds and

foggy climates may arouse or keep up the disease. For such, the climate should be sheltered and equable, the protection against cold and damp perfect. Even dry winds are injurious when they blow continually, as in islands in the trade-wind latitudes, or those constantly blowing across the deserts of South Africa where the wind is absolutely dry but arthritic maladies are excessively prevalent.

Therapy in a Nutshell.—Clear the bowels completely and disinfect them by the use of sodium sulphocarbolate; then keep them clear and disinfected.

Limit the diet to the lowest point compatible with nutrition, and this may mean the Mitchell diet of half a glass of thoroughly skimmed milk every four hours. Nobody appreciates how little food is really necessary until he tries to see how little he can get along with, if it is eaten properly.

Exclude absolutely alcohol, meats, beans, peas, the caffeine beverages, tobacco, all condiments, and foods that contain a volatile oil or an acid, such as cresses, tomatoes, fruits.

Let the cereals be taken only in forms that require prolonged mastication, such as dry toast, zwieback, scones, popped corn, whole wheat cooked like oatmeal; nut kernels, dried fruits eaten raw and completely masticated.

Exclude all foods that disagree with the particular patient, causing acidity, fermentation or an increase of arthritis.

Use such remedies as may be indicated by the symptoms in each case.

Calcalith is a good one in many instances. Do not continue any form of lime too long or too steadily.

Calcidin should be effective in loosening and carrying away the debris about the joints.

Colchicine and veratrine are of value in stimulating the eliminants, and it is instructive to see how the strength revives, the appetite improves, and the general health is enhanced under these "sedatives." Clear out the cinders and the furnace burns better.

Passive exercises, massage, must precede the active forms until the patient is enough better to essay the latter. Do not be too aggressive in this matter.

Patience is to be inculcated, for the treatment will at the best require months, and any transgression of the regimen may be expected to set the case back distressingly. But the resources of modern therapeutics are such as well to justify a very favorable prognosis in this malady.

WILLIAM F. WAUGH.

Chicago, Ill.

COMMENT ON THE LESSON

The space devoted to the Post-Graduate Course, this month, is again rather small. Next month we expect to be more generous with our space and enter into a much fuller discussion of the topic then to be taken up, i. e., rickets.

We particularly want to ask every reader of CLINICAL MEDICINE who has had experience with rickets to write us very briefly a description of the methods, dietetic, hygienic and medicinal, which he has found most effective. This is a very interesting subject, one that has not recently been much discussed, and we shall all benefit by a free interchange of ideas. This invitation is to every reader of CLINICAL MEDICINE, whether he is taking the Course or not. Please help us.

EXAMINATION QUESTIONS

1. What are the dominant theories regarding the causation of rheumatoid arthritis.

2. Describe the characteristic appearance of a knee and a hand crippled with this disease.

3. What are Heberden's nodes? Explain the muscular atrophy characteristic of the disease.

4. What three methods are useful in combating the disease?

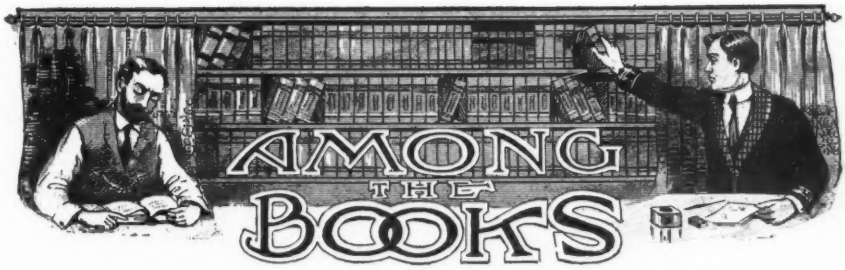
5. Outline a diet for one of these patients. Would you advise high or low protein diet?

6. What remedies, in their proper order, are most useful in treating rheumatoid arthritis?

7. What form of counterirritation do you find most valuable?

8. What part does the alimentary canal play in the etiology of the disease, in your opinion? Alcohol?

9. Describe a case occurring within your own experience, and outline a treatment.



BOOKS ON NURSING

"*A Manual of Nursing.*" By Margaret Frances Donahoe, Principal of Training School, Philadelphia General Hospital. New York: D. Appleton & Co. Illustrated. 1910. Price $2.00.

This is a textbook for the use of pupil nurses while in training, and is remarkably complete in the scope of the subjects treated. It affords information to the intending nurse on what is expected from her, and describes clearly and in simple language the various duties devolving upon the nurse in the management of various diseases and conditions in the hospital. Special chapters are devoted to the discussion of food, the administration of medicines, enemata, douches, as also to the preparation of patients for operation and their aftercare. There are also some chapters on nursing in special diseases and on the care of infants and young children.

"*Practical Nursing for Male Nurses in the R. A. M. C. and Other Forces.*" By Major E. M. Hassard, R. A. M. C., and A. R. Hassard. New York: Oxford Medical Publications. 1910. Price $1.50.

Although primarily intended for male nurses, and, perhaps, more particularly for military nurses, this little book also affords an enormous amount (considering its small size of only 340 pages) of excellent information and advice for anyone having to do with the care of invalids. It treats at length with such homely and often neglected matters as bedmaking, washing of patients, their observation, local application of heat and cold, the prevention and care of bed-sores, etc. It goes without saying that the subject of food, the administration of medicine, etc., are also considered. The text is simple and to the point, and a careful study of the little book will assist many who need information on the subject.

KERR'S "CARE OF CHILDREN"

The Care and Training of Children. By LeGrand Kerr, M. D. New York: Funk & Wagnalls Company. 8 vo. pp. 233. 1910. Price 75 cents.

An interesting little guide for parents, the purpose and scope of which is indicated in the title. The author is too well-known to require an introduction to our readers, and his name is a sufficient warranty for the usefulness of his work.

CLARKE'S "VITAL ECONOMY"

Vital Economy, or How to Preserve Your Strength. By John H. Clarke, M. D. London and New York: A. Wessels. 1909. Price 50 cents.

When the Bookworm first glanced through the headings of this little volume, he was astounded at reading such assertions as, "bathing not essential to cleanliness," "fresh air not a remedy for all," and similar phrases, and he was largely, through such captions, led to read the entire book with care—and, he acknowledges gratefully, with benefit.

The author is by no means a crank who would defend the dirty habits of the great unwashed; he much rather is an eminently sane physician and observer who is not afraid to speak against the accepted fads of the day and to expose their fallacies. His remarks concerning the daily bath, the fresh-air craze, the exercise-mania, the

tippling of alcoholics as well as of tea and its congeners, etc., are not only sensible and just, but are worthy of our attention and acceptance.

We are indebted to Dr. Clarke for a pleasant hour and for much valuable advise which the Bookworm, for one, shall not neglect to profit from. The book is written in a chatty, albeit convincing style which makes it excellent reading for a leasure hour and yet supplies ample food for thought.

GOUGET'S "ARTERIOSCLEROSE"

L'Arteriosclerose et Son Traitement. Par A. Gouget, Professeur Agrégé à la Faculté de Médicine de Paris: Médicin des Hôpitaux. Paris: J. B. Baillière et Fils. 1907. Price 2.50 francs (75 cents).

This excellent little treatise on the important subject of arteriosclerosis and its prevention and treatment was written by one of the foremost physicians of the Paris hospitals of today. Those of our readers who understand French will find in it many valuable ideas and suggestions.

PAMMEL'S "POISONOUS PLANTS"

A Manual of Poisonous Plants, Chiefly of Eastern North America, with Brief Notes on Economic and Medicinal Plants, and Numerous Illustrations. By L. H. Pammel, Ph. D. The Torch Press, Cedar Rapids, Iowa. 1910. Price $2.50.

We are glad to announce this interesting and important work on poisonous plants by a recognized authority in botany. It was of particular interest to the reviewer to find discussed, not only the usual poisonous plants, but also such small forms of vegetable life as the schizomycetes and others of the kind.

The author introduces his work by an interesting historical review on the use of poisons, and discusses the harmful effects traceable to vegetable substance in the broadest interpretation of the subject, having included all plants that are injurious, although many of these are not known to produce poisons, some even being more useful economic plants and yet injurious to some people.

It must be admitted that this interpretation of the author enlarges the scope and the interest of his book materially, and renders it more immediately useful to the physician and especially to one who employs the alkaloids and other active substances derived from plants.

"SOME POSOLOGICAL HINTS AND OTHER USEFUL INFORMATION"

This is a little pamphlet of twenty-four pages in all, issued by the Fellows Company. It contains a digest of hints on the absorption and elimination of the most-used drugs, a list of diuretics, cathartics, anthelmintics and antiemetics, tables of the overdose-symptoms of drugs, and a diet table for tuberculous patients. Although there are plenty of mistakes, it contains a mass of useful information which could hardly be found elsewhere in the same bulk.

Among the mistakes we might instance one that states that atropine begins to act in thirty minutes, while belladonna begins to act in twenty minutes. Since belladonna acts through its atropine and it requires time for the stomach to dissolve out the active principle from the encumbering dèbris of the crude preparation, these figures should be reversed. But in spite of this and some other errors, this pamphlet is so full of useful hints not readily obtained from the text-books that it is well worth sending for and retaining for reference.

"REMEDIA HOECHST"

Remedia "Hoechst," Pharmazeutische Produkte, Serotherapeutische und Bakterien-Praeparate der Farbwerke vorm. Meister, Lucious & Bruening. Hoechst a. M. 1910.

This excellent octavo volume, containing 778 pages of text, gives a collective review of all preparations made by the well-known firm of Meister, Lucious & Bruening in Hoechst a. M., which firm is the principal purveyor in Germany of serotherapeutic preparations and of bacterins. The firm has, however, also made a great many of the more recent pharmaceutical products and enjoys a reputation equal to that of Merck in Darmstadt.

The volume before us, which has kindly been sent to the reviewer, contains a wealth of literature from the medical periodicals of all countries since the year 1900, reporting the experiences with the newer remedies of physicians in private practice as well as in dispensaries and hospitals. The book is in German, and so far as we know, the agents of the Farbwerke, for the United States, Victor Koechl & Co., New York, are in a position to supply copies to those interested.

"THE INTERNATIONAL CLINICS"

International Clinics, Vol. IV, Twentieth Series, 1910. Philadelphia: J. B. Lippincott Company. Price $2.00.

The present volume of the "International Clinics" presents a review by Dr. Henry W. Cattell on Ehrlich's new preparation, arsenobenzol, besides such other important papers as on syphilis, tuberculosis, and on diverse subjects which are at present generally discussed. To the owners of this excellent series, we do not need to recommend it. Non-owners we can cordially advise to subscribe for this work, which offers quarterly representative papers upon the progress in all the various disciplines of medical sciences.

ROBINSON'S "NEVER TOLD TALES"

Two years ago we referred editorially to Dr. Wm. J. Robinson's "Never-Told Tales," which had then just appeared. A few weeks ago we received copies of the third edition. It is evident that the book has found many eager readers. It is right that this should be so, for it enters into certain phases of life which are usually talked about (if at all) with bated breath, since they are taboo "in good society." And yet the subject of all these tales, the penalty that is being paid through sexual ignorance, is one of very first importance to our race. What this ignorance means can no more forcibly be told than by quoting from the "Foreword" of Dr. Robinson's book. He says:

"The writer has seen young blooming girls converted into pitiful barren wrecks within a few months after marriage; he has seen households made desolate and children orphaned by the mother being carried off to a premature grave; he has seen young mothers reduced within a few years to a condition of wornout hags, by incessant child-bearing; he has seen children born into the world, puny and crippled, blind and noseless; he has seen many terrible things, which cannot even be mentioned here, all brought about *not* by the wickedness, but by the ignorance, of the men and women entering the marriage relations; all of which could have been prevented, if the tales I am telling now had been told before."

From this it appears that this book has a very definite purpose, that is, to bring home with the utmost power the devastation that has been and is being wrought by ignorance of the diseases and disasters peculiar to the sex relation. The stories are real stories, telling of people whom we physicians all know. Who of us could not duplicate the "Story of Rose and Edward," the young woman infected with gonorrheal salpingitis on the marriage bed, compelled to undergo an unsexing operation? Or of Lydia Swinton, the innocent girl who is led astray and ruined by a conscienceless polished scoundrel? Of Betty and Bob, the childless couple, longing for children, the man blaming the woman for *his* unsuspected sterility, with domestic unhappiness, ending in the divorce courts? Of Brannigan, the syphilitic, marrying in spite of the doctor's warning, and of the heritage of disease which followed?

We all know of these things, but do our patients, the men and women who look to us for medical advice? Too often they do not, and for these, the people who must suffer through ignorance, this book has its special message, and peculiar mission. It is a book which every physician should read and own, and which he may well place in the hands of the many who need it—the young men (yes, and the young women) entering the sex life, about to be married, and their fathers and mothers.

In the first review that appeared in these pages we called it a terrible book. It is terrible in its revelations, but it will save from just such horrors as those depicted, if it is read. And so it may become a book preservative.

The two final essays in the book, "A Wonderful Country," and "A Page from the Life of Professor Beaumont," are of a different character from the earlier chapters. They give us a glimpse of the really optimistic side of Dr. Robinson's character.

LORAND'S "OLD AGE DEFERRED"

Old Age Deferred. The causes of old age and its postponement by hygienic and therapeutic measures. By Arnold Lorand, M. D. Translated, with additions, by the author, from the second German edition. Philadelphia: F. A. Davis Company. 1910. Price, $2.50.

The art of living long has ever formed an attractive subject of study for thinkers after they had passed the meridian of life. From Cicero's "De Senectute" to Bacon and Temple, from Cornaro's "La Vita Sobria" to Hufeland's "Longevity," and down to the present day, the treatises and monographs written on the subject are many and varied.

It is easily understood that with the researches and discoveries of recent years in biology and biochemistry our ideas concerning the causes of growing old should have undergone rather marked transformation, of particular importance in this, as in many other respects, having been the studies of Sajous on the internal secretions, which introduced many new conceptions and discoveries, and which now engage the attention of students the world over.

Dr. Lorand, the author of the volume before us, bases his theories concerning old age largely on the results of Sajous' investigations. Old age, to him, is a chronic disease due to degeneration of the glands yielding internal secretions, the thyroid, the sexual, and the adrenal glands in particular, but including also the liver and the kidneys; this pathologic condition being characterized by the abundant growth of connective tissue, diminution of the oxidation processes, and a concomitant condition of autointoxication.

The arguments by which the author vindicates his position are interestingly presented, and a careful study of the book opens up a broad vista of new ideas. Of particular interest are Lorand's views on the importance of heredity and its influence upon the vital processes. According to him, we might go even further than did Oliver Wendell Holmes when he said that the education of a boy should begin a hundred years before he is born.

It would serve no useful purpose to enter more particularly into any one of the many subjects discussed so interestingly by the author. The book is an important one and should be studied by every physician. We recommend it warmly to our readers.

"SYMPOSIUM ON PNEUMONIA"

Pneumonia: A Symposium on the Occurrence, Etiology, Diagnosis, Prognosis, and Treatment of Pneumonia. Reprinted from *American Medicine*. Arranged and edited by H. Edwin Lewis, M. D., New York: American Medical Publishing Company: 1910.

This timely little volume presents the views of some of our most noted clinicians upon this dreaded disease, pneumonia, a disease which, but a very few years ago, was claimed to be not amenable to active treatment. It is interesting to note that the attitude of these men in regard to this disease is decidedly hopeful and we are convinced that much can be accomplished by positive and energetic therapy. The book is well worth reading.

CULLENS' "SERPENT'S TRAIL"

The Serpent's Trail, or Memoirs of Harold Bagote, Physician, A Tale of the South and of Cuba. By F. B. Cullens, Broadway Publishing Company, New York, 1909.

This is a tale of the South and of Cuba, beginning in the times of the civil war, and finding its denouement during the endeavors of the Cuban junta to secure American intervention in the long continued quarrel between Spain and her last Western possession. The story is interesting and attracts us because it is written by a physician. It is interestingly written, but its enjoyment is greatly marred by the many typographical errors. Never-

theless, the Bookworm spent a pleasant hour following the fate of Harold Bagote, Physician.

TWO POPULAR BOOKS ON HYGIENE

"*Principles of Public Health.*" By Thos. D. Tuttle, B. S., M. D., Yonkers-on-Hudson, N. Y. World Book Company. 1910. Price 60 cents by mail.

A simple textbook on hygiene, presenting the principles fundamental to the conservation of individual and community health.

"*Primer of Hygiene.*" By John W. Ritchie, and J. S. Caldwell. Illustrated. Yonkers-on-Hudson, N. Y. World Book Company. 1910. Price 48 cents by mail.

The purpose of this book, says the author, is to teach the lower-grade pupil what he himself can do to keep his body in health—personal hygiene.

TOUSEY'S MEDICAL ELECTRICITY

Medical Electricity and Roentgen Rays. By Sinclair Tousey, A. M., M. D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. Octavo of 1116 pages, with 750 illustrations, 16 in colors. Philadelphia and London: W. B. Saunders Company. 1910. Price, cloth, $7.00 net; half morocco, $8.50 net.

This is an imposing volume on electrotherapy, in fact, it is the most complete single-volume work on the subject this reviewer has seen.

The author introduces an innovation by considering static electricity before he takes up galvanism and faradism, which has the advantage of rendering that branch much more easily comprehended, and avoids the confusion in the mind of the student frequently resulting from the older method of presentation. The diagrams and explanations are clear and comprehensive. Under this head the point is brought out that the illumination of a vacuum-tube by a static machine is not the result of a high-frequency current, but requires an additional appliance. The method of producing high-frequency currents both with static machine and coil is also fully described.

The chapters on galvanism, faradism, electrodiagnosis, and electropathology are complete and up to date. These branches are like mathematics in that they do not admit of great variation in the mode of presentation, but Dr. Tousey shows that he is thoroughly versed in the subject-matter and capable of explaining it clearly to his readers.

Dynamic electricity and the x-ray are exhaustively considered and a chapter on radium completes the volume.

This book is a work of merit and will occupy a permanent place in medical literature.

NOBLE M. EBERHART.

KEMP'S "DISEASES OF STOMACH AND INTESTINES"

Diseases of the Stomach and Intestines. By Robert Coleman Kemp, M. D. Octavo, 766 pages, with 279 illustrations. Philadelphia and London: W. B. Saunders Company. 1910. Price, cloth, $6.00 net.

This is a very practical and readable guide for the treatment of diseases of the digestive canal, which evidently presents the results of personal experience and investigation. The methods of observation, examination and treatment are not only clearly described, but also well illustrated, which will prove of considerable assistance in many instances.

The reviewer was interested in noting that the author evidently agrees with Chittenden's low-proteid standard in the dietary requirements, both in health and in disease.

The description of digestive disturbances and their causes and of the whole domain of diseases of the digestive apparatus is clear and lucid, the treatment is conservative, and the indications for surgical intervention are well presented.

WELLS'S "COMPEND OF GYNECOLOGY"

Compend of Gynecology. By W. H. Wells, M. D., Fourth Edition. Philadelphia: P. Blakiston's Son & Company. 12mo., 290 pages, with 153 illustrations. 1911. Price, cloth, $1.00.

Compends are a necessity in these days when the man who presents himself before

an examining board must know so many things. The writers of these manuals seem to have studied and mastered the art of including the most essential points in small space, and this is especially evident in the book before us. In this we note a vast improvement over the earlier compends. The illustrations are very good, though we doubt if many microscopists are so fortunate as to have the spindle-cells of sarcoma as definitely outlined as they appear on page 234.

SALEEBY'S "RACE CULTURE"

Parenthood and Race Culture. An Outline of Eugenics. By Caleb Williams Saleeby, M. D., Ch. B. New York: Moffat, Yard & Co.

This work is based on the trite semitruisms which mar most of the platitudinous modern discussions on heredity. The fundamental idea is a nickel-in-the-slot initial velocity whereby the spermatozoon emerges as a completed being.

This homunculus-notion on which Sterne lays such stress in Tristam Shandy, was exploded nearly three-quarters of a century ago by the embryologic discoveries of Von Baer. The fact that the ovum plays the chief part in embryogeny, and that it is chiefly a product of maternal environment, is totally ignored.

The influence of the struggle for existence between the developing organs, as shown by Roux over twenty-five years ago, receives no attention. The evolution by atrophy, which DeMoor has demonstrated, and the resultant periods of stress, such as simian or senile periods of embryogenic arrest—and which plays such a part in precocity and allied premature senilities—have not come within Dr. Saleeby's ken. The fact that this is the result of a struggle between the male and female types, of which the female is the higher, since it determines position in the scale of life, is seemingly unknown to the author.

Prenatal environment is largely ignored in the book. Heredity is erroneously regarded as a destiny which *must* be, rather than, as Kiernan has truly said, as a prophecy which *may* be. This fatalistic notion marks the book, since maternal environment before birth and child environment after birth lie behind most alleged effects of heredity.

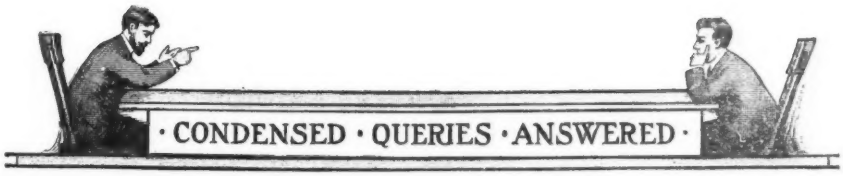
Dr. Saleeby's motive is to be commended. He is evidently sincere and honest in his convictions. Books of this character, if based on correct premises, are valuable, for "there is," as Saleeby says, "no greater need for society today than to recognize that education must include, *must culminate in*, preparation for the supreme duty of parenthood.

"* * * * The boy and girl must learn that the racial instinct exists for the highest of ends—the continuance and ultimate elevation of the life of mankind. It is a sacred trust for the life of this world to come. We must teach our boys what it is to be really 'manly'—the fine word used by the tempter of youth when he means 'beast-ly.' To be manly, is to be master of this instinct. And the 'higher education' of our girls, as we must teach ourselves, will be lower, not higher, if it does not serve and conserve the future mother, both by teaching her how to care for and guard her body, which is the temple of life to come, and how afterward to be a right educator of her children. The leading idea upon which one would insist is that the key to any of the right and useful methods of eugenic education is to be found in the conception of the racial instinct as existing for parenthood and to be guarded, reverenced, educated for that supreme end."

To the student of eugenics the volume will be found interesting, although, possibly, not always convincing. It is to be hoped that this book will stimulate study along these lines, which have been so persistently neglected. It certainly ought to fill up, in some measure, the immense void of ignorance prevailing among the laity regarding these matters, and, more's the pity, among many in the profession.

Altogether Dr. Saleeby is to be commended for his telling style, his plain but elegant diction, and the enterprise he has displayed in quoting from innumerable writers on eugenics and allied subjects. The volume can hardly fail to be a unique and interesting accession to the doctor's library.

GEO. F. BUTLER.



PLEASE NOTE

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report the results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

ANSWERS TO QUERIES

ANSWER TO QUERY 5665.—"Nocturnal Emissions Treated with Styptol." A reader of CLINICAL MEDICINE sends us the following translation from the *Wiener klin. Woch.*, 1909, No. 37: "Jos. Koenig, district physician in Karlsbad, refers to the reports of the Congress of Internal Medicine of 1904, in which he published his results with hydrastis, which can control the pathological and excessive seminal discharge better than any other remedy commonly in use. Others have come to the same conclusions independently.

"The discharges will diminish in frequency, no matter whether they occurred almost every night or even several times a night, to about once a week, if 40 to 60 drops of the extract are taken before retiring.

"Within the last year the author has tried styptol, the phthalate of cotarnine, arguing that drugs which will contract the vessels of the uterus will show an analogous action upon the utriculus masculinus and the excretory ducts of the seminal vesicle.

"He was not diasppointed in his expectations. No matter how frequent the nightly losses were, the intervals could be lengthened to from one to three weeks. At the same time there was a distinct lowering of the sexual hyperexcitability, where present.

"He administers first two, later three, styptol tablets, 3-4 grain each, shortly before retiring, for a month, to be repeated at longer intervals if necessary."

—

ANSWER TO QUERY 5686.—"Chorea". You will receive many letters from your query to the CLINIC readers. I wish to state that there is nothing in the category of medicine that will tax anyone's nerves so much as to be called upon to treat a case of genuine chorea. In my personal experience I have had fifteen cases to contend with, six of which were very severe.

Above all things, there is one absolute measure that must be carried out to the letter, and that is absolute control of the patient; he must be kept quiet and at rest.

When this has been accomplished, clean out, clean up and keep clean. Then give 1 grain of antipyrin for every year of the patient's age, increasing by 1 grain each day to every dose until all twitchings have stopped. Start with Fowler's solution with the beginning of the antipyrin and give to the point of tolerance. At one time I gave a boy of eight years 14 grains of antipyrin twice daily. In a case I now have under treatment (a girl of thirteen), I gave 28 drops of U. S. P. Fowler's solution four times daily before she manifested the least sign of having taken arsenic at all.

If you think 15 or 20 grains of antipyrin too large a single dose, give half of it at 8 p. m. and the other half at 9 p. m. directing your patient to retire immediately after the first powder has been taken. This will insure a good night's rest. It may be necessary to give two or three doses of antipyrin per day to control twitching. When twitching stops, stop the antipyrin, but continue with Fowler's solution, giving it for ten days or two weeks after the twitching has ceased, after which it should be decreased a drop per dose for each day. At the same time give syrup iodide of iron, this to be continued for many weeks after.

Try antipyrin at night for only ten days, increasing the dose 1 grain daily, using Fowler's solution also. If twitchings are not diminished, use two (full) doses of antipyrin daily, besides insuring quietness and rest. Then let me hear from you six weeks from the time you have properly put this treatment into effect.

What I have written above has also been practised in one of my first cases with this trouble. I recall an article I read to that effect some years prior, and since then I have treated fifteen cases with good results; and have never had a recurring case.

Be sure that growths or other lesions are not the cause, and, as someone has well said, "be sure you are right, then go ahead."

JAMES M. TISCHE.

Wood Lake, Neb.

—

ANSWER TO QUERY 5690.—Referring to Query 5690 in your April issue, allow me to state that there has been considerable discussion in German papers in regard to "carottensuppe" (decoction of carrots) as a splendid infant food in certain bowel diseases. You will find the articles either in the *Deutsche Medizinische Wochenschrift* or *Muenchener Medizinische Wochenschrift* of 1910.

FERDINAND HERB.

Chicago, Ill.

QUERIES

QUERY 5695.—"Erythema Urticans?" J. A. W., Indiana, is treating a young man, age 22, farmer, with good family history, who never has been sick, except with measles several years ago. Habits are good; no alcohol or tobacco are used. Urine is normal; bowels are regular; tongue is clean; in fact, nothing wrong can be discovered. But since October 1, last, he has, on violent exercise (such as running, sawing wood, throwing hay from mow, etc.) had a rash, very red, which itches intensely, almost making him frantic. This never comes on except after exertion. When not working or on moderate exercise he does not experience this trouble. Heat or cold is without effect. The skin looks perfectly normal as soon as he cools off. He has been given nerve sedatives, alkalis, eliminants, etc., but without benefit.

Erythema fugax is almost always of obscure origin and most capricious in its appearance and course. It is not always easy to distinguish between an erythema hyperæmicum and a mild urticaria, i. e., erythema urticans. Pruritus is a feature in the latter disorder, and we are inclined to diagnose your case as such.

The rash may be localized or general, or general today and more or less localized tomorrow. There may be slight elevation of the erythematous areas or merely a "blush." It is, of course, absolutely essential that the cause be discovered and removed. In nine cases out of ten an autotoxemia exists (retention of urea or absorption of products of intestinal fermentation); still, now and again, the underlying disorder cannot be identified.

A course of eliminants, together with the arsenates and digestants (papayotin and diastase), usually meets the requirements. It is also desirable to have the skin kept active with epsom-salt sponge-baths followed by friction with a rough towel. Now and again pilocarpine in "small repeated doses to effect" proves promptly curative. It might be well to have a blood-smear examined. Have you tested the urine for indican? What is the output of urea and of solids? Any signs of anemia? Look up the underwear worn. Some dyes are extremely irritant, especially the scarlet.

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QUERY 5696.—"Ragged-cup (Silphium Perfoliatum) in Splenic Diseases." J. R., Indiana, is studying the drug called Indian cup-plant, also sometimes called "ragged cup." It is, our correspondent assures us, almost a specific for any kind of splenic trouble."

There are thirteen species of silphium, or "rosin-weed", in the United States. The common rosin-weed, silphium laciniatum,

is found from Ohio to Alabama, west from Texas to South Dakota. Common names are pilot-weed and polar-plant. Silphium perfoliatum—cup-plant, Indian-cup, ragged-cup—is found in Ontario and in eastern United States, west to Nebraska. Another variety of silphium, known as prairie-dock, prairie-burdock, rosin-plant, has the same properties as the laciniatum, the herb containing a resinous substance of aromatic order.

It is well to bear in mind that sarracenia purpurea—the pitcher-plant, fly-trap, huntsmans-cup, Indian-pitcher, skunk-cabbage, etc.—is also known as "Indian-cup." Other popular names for this plant are whippoorwil-boots, smallpox-plant, dumb-watches, Eve's-cup, etc. This plant is tonic, anodyne and astringent.

Berberine acts directly upon the spleen, and it may be well to bear in mind this fact. We should be pleased to hear from any doctor familiar with silphium perfoliatum or its action.

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QUERY 5697.—"Postpartum Hemorrhage." H. F. C., Massachusetts, desires to know whether the calcium salts would prove beneficial to a patient "who seems in fine condition everyway, except that she has pain through her ovaries constantly, but is relieved as long as she takes the uterine tonic I give her. (Composition: Aletrin, gr. 1-2; bryonin, gr. 1-500; caulophyllin, macrotin, helenin, each gr. 1-6, amorphous hyoscyamine, gr. 1-500.) She has had eight children, and is about five months pregnant again. She is afraid because she has such terrible bleeding after each confinement. Her monthly periods are normal except for pain."

The patient's blood should be examined, and we advise you to see if there are any polypi, or perhaps a lacerated cervix. You might advantageously give calcium chloride, provided there is a blood dyscrasia. You could not, of course, expect any benefit from such medication if a local lesion is the cause of the hemorrhage.

If you have delivered her before, describe the character of the hemorrhage. When does it come on? Is there difficulty in securing contraction of the uterus? We should be inclined to give caulophyllin and viburnin three times a day, for a month or six weeks prior to parturition, with 2 drams castor oil each night on retiring, for fourteen or fifteen days prior to the expected confinement.

Hydrastinine will probably control the hemorrhage if it occurs. It is well to give a good dose of atropine first, say, as soon as the child is born, then hydrastinine to maintain effect. Probably you have not used atropine, at the right time, in the right way, to secure results. Bear in mind the action of the drug and you will realize how speedily it reduces localized congestion. The *cause* of the bleeding must always be recognized and appropriate remedies given.

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QUERY 5698.—"Chloasma." J. W. H., Texas, reports a case now under his observation and asks for diagnosis and treatment. Male, age about thirty, some months ago noticed a discoloration or pigmentation of the skin between the foot and knee of one limb. The discoloration was almost solid over the area affected, but faded off into spots at the edges; the pigmentation has gradually been spreading until now it covers most of the lower limbs, which are dark brown in color. There is no pain, soreness, itching or irritation at all; in fact patient says he would not know anything was wrong if he did not see it. His health is seemingly perfect.

It would seem that the patient has chloasma. In this disease the only alteration of the skin is in its color. A deposit of pigment occurs in the rete mucosa and as a result circumscribed or diffused patches of yellowish to black discoloration make their appearance. When the patches are black the disorder is called malasma or melanoderma. Such primary pigmentation occurs in Addison's disease, tubercular leprosy, abdominal tuberculosis, cirrhosis of the liver, gastric cancer, malaria, diabetes, exophthalmic goiter, etc. The ingestion of arsenic may set up a chloasma. Occasionally hyperpigmentation follows exposure (of usually covered portions) of the body to the sun, but it is hardly likely that a dignified school principal has been exposing his extremities in that way.

In pityriasis versicolor or mycosia microsporonina (sometimes confused with chloasma) we have a vegetable parasitic disease, characterized by the appearance of brown, variously shaped and sized patches, usually upon the trunk.

The patches at first are circular, but as they grow larger they lose definite contour though occasionally the edges are raised. It is very unusual for the arms and legs to be affected unless the chest has been primarily infected. The only subjective symptom is itching and this is frequently absent.

The treatment of chloasma proper is very unsatisfactory. Applications of peroxide of hydrogen cause a temporary disappearance of the pigmentation. Pure carbolic acid applied with a swab sometimes proves effective. The skin turns white and in a few days dead epidermis peels off.

Bichloride of mercury in two-percent solution may be applied repeatedly until vesication is secured; the vesicles being removed the raw surface is dusted with borated talcum or other drying powder. In pityriasis versicolor there is more or less scaliness and the presence of microsporon furfur settles the diagnosis. The best treatment for the latter condition is to have the patient scrub the skin thoroughly with green soap and water, then apply twice a day saturated solution of sodium hyposulphite; diluted sulphurous acid is also a prompt remedy. We would urge upon you, however, the necessity of making a very thorough examination of the individual and his secretions.

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QUERY 5699.—"Morphine in the Acute Stage of Pneumonia."—D. B. J., South Carolina, ventures the suggestion that, in the treatment of an acute form of pneumonia where there is pain in the side as well as high temperature, the triad of aconitine, digitalin and strychnine, supplemented by a hypodermic of morphine to relieve the pain and the cough and to make the patient rest, makes the treatment complete. He adds: "My opinion is that the sulphocarbolates for intestinal antisepsis are overestimated in your practice. Laxative salines are proper with special provisions to nourish and sustain the patient, but the sulphocarbolates are irritant and interfere with digestion and assimilation."

We cannot endorse your suggestion, Doctor, that morphine should be given with the "trinity" in the acute stage of pneumonia. Opiates, as a matter of fact, are rarely, if ever, indicated in this condition and never in conjunction with aconitine. The basal treatment outlined by us so many times proves efficacious in ninety-eight cases out of one hundred, and the patient is usually convalescent when individuals treated along old-fashioned lines are just reaching the crisis.

We cannot agree with you either that the sulphocarbolates are "overestimated." On the contrary, we are more and more convinced (and our opinion is shared by thousands of physicians throughout the country) that the efficacy of the intestinal antiseptic *can not* be overestimated, and there is hardly a disease in which its intelligent exhibition would not prove beneficial. It is essential, of course, in every case, to eliminate thoroughly when exhibiting intestinal antiseptics. There is no use trying to disinfect the Augean stables until the accumulation of offensive material is removed.

If you have never experimented in this direction, doctor, give a few doses of calomel, podophyllin and bilein, followed by a morning saline laxative and 2 to 5 grains of intestinal antiseptic with 4 ounces of water every three hours, to your next patient presenting a high temperature and other evidence of toxemia. You will be pleased at the result, and you will find that a very few doses of the "trinity" or other indicated antipyretic will then suffice to keep the temperature below the 100-mark.

Of course, there are conditions in which it is necessary to select the indicated sulphocarbolate. Sodium sulphocarbolate in extreme acidity; the zinc salt in relaxed conditions with profuse serous discharges; calcium sulphocarbolate toward the end of exhausting diseases or where lime is deficient, etc.

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QUERY 5700.—"Definite Diagnosis Desired." V. M. G., Michigan, presents the following clinical data and asks for confirmation of his diagnosis in the case

of a boy two years old; family history negative; personal history showing no previous illness except a susceptibility to "colds." He writes:

"On January 5 I was called and found the child very hoarse and breathing hard. I made a thorough examination and found temperature, pulse, heart, and urine normal; lungs all right; inspiration easy, but expiration, 20 per minute, difficult; pharynx normal. Patient ate well, slept well, and appeared to have no pain, but at times could not breathe lying down and would choke on awakening from sleep. This condition passed away very soon.

"I ordered a thorough cleaning out of the intestinal tract and prescribed calcium iodide and a mixture of the tinctures of aconite, belladonna, and bryonia; also red mercuric iodide; oil of turpentine, and lard to be applied to neck and chest. The next day I found the symptoms same as before. I examined the larynx as thoroughly as possible and except for a slight redness found nothing abnormal.

"On the 8th I was called hurriedly, but the child was dead before I could reach there. The parents said he ate a fair dinner and sat at the table, had played and run about the house all the morning; after dinner he slept twenty minutes, but on awakening he choked severely, grew black in the face (which soon passed), but could not breathe lying down. He vomited part of his dinner, then appeared to feel better. Just before he vomited he appeared to have chills, but only for a moment. In a half hour he suddenly choked up, perspired profusely, and made frantic efforts to get his breath, and expired before anyone could leave the house for assistance. Although the child had become cyanotic during other choking attacks, they said his face did not show cyanosis during the last one. He had no elevated temperature at any time and pulse was normal. I diagnosed it as laryngeal spasm due to acute catarrhal laryngitis."

It is, unfortunately, impossible for us, at this distance and with our comparatively limited conception of conditions, to make a definite diagnosis. Of course we must think of the possibility of pulmonary embolism, though one would naturally expect here a more rapidly fatal termination. It it also possible that an infected and submerged tonsil was overlooked. Spasm of the glottis may have set up reflex irritation and caused the death of the child. Edema of the glottis, as you are aware, comes on suddenly and often proves rapidly fatal. It is possible that a timely tracheotomy or intubation would have saved the little fellow's life.

We should have been inclined to give apomorphine with lobelin, enough to secure thorough relaxation. We wish we were able to express a more positive opinion; but only most careful study of the symptoms present in the individual and a knowledge of the underlying pathology would enable one to make a definite diagnosis here. We present the case for comment.

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QUERY 5701.—"Ascites." I. P. J., Arkansas, asks aid in treating a patient, age 54, who was healthy until 1905, when he first began to notice decline of health, suffering a mild stroke of paralysis but from which he soon recovered; from that time a general decline of health occurred, and in 1909 he noticed swelling of limbs and abdomen. In April of 1909 he was struck by lightning. After rallying from that, he then was treated for ascites. According to his statements, he has been given about all the medicines that ever were recommended, at last the trocar being resorted to. He was tapped thirty-eight times, altogether 104 gallons of fluid being drawn out. The man's lungs are good; pulse about 72, but the heart sounds as if beating in fluid, yet it is full and strong. The liver is enlarged and easily felt below the ribs, in fact he probably has cirrhosis caused from alcohol used years ago, as in his younger days he lived a fast life. Specimen of urine is submitted for examination.

Unfortunately, the doctor did not state the amount of urine passed in twenty-four hours, hence the total solids cannot be estimated; neither did he give sufficient clinical data to enable us to make a positive diagnosis or suggest effective treatment. However, one thing is very certain, namely, renal congestion (and, we fear, infection). With liver and kidneys both affected, the autotoxemia can be readily understood

and we should naturally expect more or less ascites.

We prescribe a basal treatment and suggest that he report its efficacy in two weeks, forwarding at that time another 4-ounce specimen of urine. Give us some idea of the character of the stools, area of hepatic dulness, condition of tongue and skin, and state how extensively the limbs are involved. We can hardly expect a cure in this case, but very much may be done for the patient.

As a first step, give blue mass and soda; podophyllotoxin and iridin at 7 p. m., and half hourly thereafter until 6 such doses have been taken; the next morning upon rising a laxative saline draught. Repeat this every third day. After the purge, begin with apocynin, a dose every two hours, to every second dose of which cactin, gr 1-67, may be added. One-half hour before each meal give barosmin, and immediately after food chionanthin; one hour later bilein with pancreatin and sodium sulphocarbolate.

Place the patient in the hot wet-pack once a week, giving a hypodermic of pilocarpine as he goes in. The idea is to remove as much as possible of the fluid through diaphoresis. Do not let him drink too much, and carefully oversee his diet. Make him exercise as much as possible in the open air; in fact, he should almost *live* in the sunlight.

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QUERY 5702.—"Gelseminine and Specific Gelsemium Compared." E. J. S., South Dakota, wishes to know how gelseminine hydrobromide, gr. 1-250, compares with the specific tincture of gelsemium. He uses from 15 to 20 drops of the latter every half hour until results follow, but is unfamiliar with the alkaloid and would like to know its efficacy without having to experiment.

The 1-250 of a grain of gelseminine hydrobromide is equivalent to 2 grains of good dried gelsemium root, and therefore to 2 minims of the specific medicine, which is supposed to represent the crude drug minim for grain. As you are aware, the stated doses of the fluid extract is from 2 to 5 minims. It would seem, therefore, that you are giving unusually large doses, i. e., 15 to 20 grains of gelsemium.

It is irrational to compare a given quantity of a definitely acting principle with a fluid preparation which may or not contain the desired quantity of the remedial agent.

Gelsemium, the root, varies in its active-principle content, and 5 grains of root taken from one batch may contain 1-100 grain of gelseminine; or an equal quantity double the amount. If from 100 pounds of gelsemium the chemist is able to secure one ounce or, maybe one-half that quantity of active principle, he has so many known-to-be-effective doses, whereas the regulation amount of fluid extract may or may not possess the desired potency per minim. After all, it is the active-principle content which makes any fluid preparation valuable, and the modern therapeutist prefers to have his active principle in definite form and mathematically correct dosage ready for exhibition.

The correct way to exhibit gelseminine or any other similar drug is to give the smallest known-to-be-effective dose for an adult at brief intervals to effect—remedial or physiologic. The conditions present in one case may require twenty and the very next individual, perhaps, may respond to five doses. Think and test this matter out and you will realize the superiority of the method.

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QUERY 5703.—"Cervical Catarrh with Ulceration." W. S. W. asks for the best topical application for chronic small white ulcers, looking like blisters, around the os uteri? Eight of them wreathe the os. Cervical catarrh is present.

Cleanse the part thoroughly with a swab saturated with H_2O_2, dry, and touch each ulcer with pure carbolic acid, being extremely careful not to get the fluid upon normal tissues. Neutralize in one minute with alcohol, then apply strips of gauze saturated with an antiseptic oil, carbenzol diluted with an equal quantity of olive oil, or ichthyol and glycerin. You may advantageously treat the cervical canal at the same time, disintegrating the plug of mucus with H_2O_2, then swabbing with the medicament. Internally give hydrastin, collinsonin and calx iodata.